THE OIL WEEKLY

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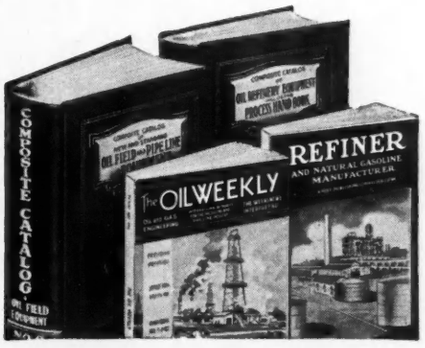

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The Oil Man's Calendar

NOV. 3–4	American Association of Petroleum Geologists, Pacific Section, Los Angeles, California.
3	Mid-Continent Oil & Gas Association, Oklahoma-Kansas Division, Tulsa, Oklahoma.
4	California Natural Gasoline Association, Los Angeles, Calif.
14–18	American Petroleum Institute, (Annual), Stevens Hotel, Chicago.
DEC. 5–9	American Society of Mechanical Engineers, (Annual), New York.
	Mid-Continent Oil & Gas Assn., Standing Tax Committees, Dallas, Texas.
7	Oil & Gas Association of Michigan, Mt. Pleasant, Michigan.
10	West-Central Texas Oil & Gas Association, Abilene, Texas.
APR. 24–29	Oil-World Exposition, Houston, Texas.

Contents « November 7, 1938

Volume 91, Number 9

The Changing Panorama.....11-12

Editorial.....13

Feature Section.....14-50

Readjustments of Working Schedules Necessary Under New Law.....14
BY L. J. LOGAN

Eastern Venezuela of Increasing Importance.....16
BY W. V. GROSS

A Rational Proration Plan for East Texas.....28
BY ALEXANDER B. MORRIS

Oil Is of Great Benefit to Texas.....36
BY C. P. MCGAHA

Michigan's Allegan Boom.....42
BY NORMAN X. LYON

News Section and Index.....59

Men in the Industry's News.....55

Foreign Developments.....51

Squeaks from the Bull Wheel.....97

New Products for the Field.....94

Manufacturers News.....96

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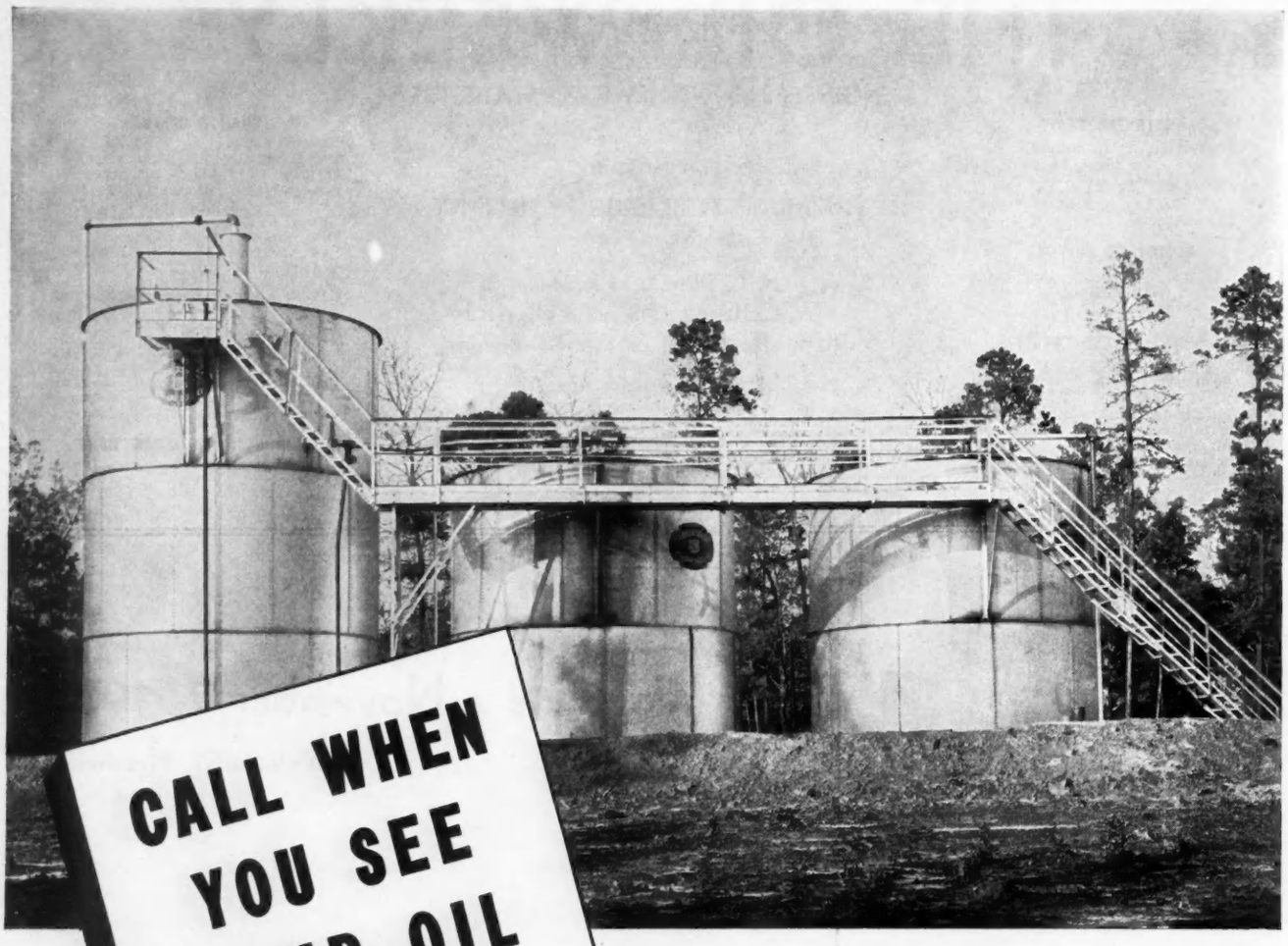

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This Week's Panorama

THE general business outlook remains distinctly promising, giving an important reason for cheerfulness regarding the oil industry's future.

Business activity in general is currently at the highest level of the year and it is still increasing. This is evidenced by the fact freight car loadings are at the highest levels since November of last year. Steel operations are at about 54 percent of capacity, highest since October of last year. Textile production has increased greatly in recent months. Business failures are decreasing, and building has attained the largest proportions since 1931.

Electric power production currently is at the highest level of this year. Employment in September was 3.7 percent larger than in August, and factory payrolls were up 5 percent, 640,000 workers having been employed since June. Virtually assuring vigorous business ahead is the fact that the federal government plans to spend 2½ billion dollars before midwinter.

More Automobile Sales Expected

Especially encouraging to the oil industry is the outlook for increasing sales of automobiles. Estimates of sales in 1939 lately have been more optimistic even than those of some weeks ago. Ward's Automotive Reports, Inc., after analyzing the factors behind the current increase of confidence, has predicted that production of the 1939 model year would be close to 4,000,000 units. This is the highest production estimate that has been made so far in automotive circles.

Output of the automobile factories currently is the largest since December of last year, and it is expected to continue increasing for several more weeks before leveling off, in view of the rising accumulation of orders at the factories.

Meanwhile, field stocks are the lowest since late 1933, and production is being largely absorbed by retail buying.

Automotive employment has turned sharply upward, and is expected to rise by the end of October to more than 80 percent of the level that prevailed a year ago.

Fulfillment of the above estimate for 1939 would bring automobile production well toward the level of 1937 when 4,808,974 cars, trucks, and tractors were sold, and would represent a great improvement over this year's record. In the first 9 months of 1938, factory sales aggregated 1,519,329 vehicles, according to the Department of Commerce, as compared with 3,792,809 in the similar period of 1937 and 3,335,730 in the first nine months of 1936.

The implications for the petroleum industry are encouraging. Even with automobile sales lagging, gasoline demand likely will set a new all-time record in 1938. And with the automobile sales sharply higher in 1939, the gasoline consumption would increase further to unprecedented proportions.

Weak Markets Curtail Profits

It is indicated that the oil industry in the third quarter of this year had around 50 percent lower profits than in the corresponding period last year, because of relatively low gasoline prices and curtailed crude oil production.

For the first nine months of 1938, however, the earnings probably were only between 40 and 30 percent lower than in the corresponding period last year, results having been relatively favorable in the early months of this year.

These figures are indicated by the results of the first half dozen oil companies to report on their operations for the third quarter.

The final quarter of 1938 is likely to bring even less favorable results than the third quarter, because of the recent nation-wide lowering of crude oil prices and the continued weakness of gasoline prices. Consequently, the year as a whole probably will show an even larger decline in earnings than that for the first nine months.

Solely producing companies had the best earnings for the first three quarters of this year, as crude prices were maintained unchanged until recently; and even following the price reductions their profits will compare favorably with those in the other branches of the industry.

The refining companies and integrated companies with relatively heavy interests in refining, on the other hand, have suffered from the depressed prices for gasoline and other finished products, although they will have slightly better margins for profit following the reductions of crude prices.

Industry Observing Wage-Hour Law

Because of the wide interest in the new wage and hour act, which became effective October 24, this publication has solicited brief comments from several persons in regard to the law.

Russell B. Brown, of Washington, general counsel for the Independent Petroleum Association of America, responded with the following interesting comment:

"The petroleum industry in general seems to be accepting the wage-hour law and endeavoring to comply with it. Nevertheless, there are many questions which are crying out for answer. The heavy burdens placed upon the administration of this law will delay the answers to some of these questions for a little while. In the meantime, regardless of the

cost or the inconvenience, it is both desirable and advisable that members of the industry be prepared to show that they are seriously endeavoring to give the law their fullest obedience.

"Just where a product enters a 'stream of commerce' is an important question not yet solved," stated Brown. "Both the law and the regulations appear to indicate that all labor which is concerned with production of any commodity which eventually enters interstate commerce will come under the law. Out of this there arise some interesting questions, a few of which are set forth here:

"If several dry wells are drilled before oil is found on the same lease, does the drilling of the dry wells come under the law? Are those drilling operations on that lease considered a part of the development of the oil underlying that lease?

"Are stripper well workers who live on the lease and who must be prepared to meet an emergency at any hour to be considered as working twenty-four hours a day? (This question has actually been raised by the Legal Section of the wage-hour administration in conversation with our Washington office.)

"If petroleum or some of its products are sold with the positive understanding that they will be entirely consumed within the state where they were produced and yet were later put into interstate commerce by the purchaser in violation of that understanding, is the producer liable for failure to comply with the law?

"Since rig building is an important step in the production of petroleum, are rig builders under the law?

"Are truckers who carry supplies from a railroad station to a lease a part of the process of producing goods for interstate commerce?

"These questions are not foolish," continued Brown. "They are actually being asked. They will eventually be answered. In the interval between the question and the answer, many people are in a fog of hesitation. There is just one sound policy to pursue under these circumstances. Everyone, in his own peculiar circumstances, facing the whole question honestly and sincerely, must make his own decision. That decision, however, should always be based upon a serious intention to give the fullest possible compliance.

"Congress may be asked at its coming session to clarify the law in many respects. That has already been publicly stated. It may be unfortunate that some points are ambiguous. Nevertheless," concluded Brown, "in the meantime, the law is on the statute books."

Status of Independent Operators

As to whether or not independent producers operating only intrastate come under the provisions of the new law, one attorney expressed the opinion that if the oil sold from the lease is going, all or in substantial part, into interstate or foreign commerce, then the employes working or connected with its production and not otherwise specially exempted by the act, are subect to its terms. On the other hand, he said, if the facts show that the oil generally does not go into interstate or foreign commerce, then the employes in question would not come within the law. Of course, he continued, a statement about oil going or not going into interstate commerce is obviously inadequate, but it is about as close as one can come to a general rule. If the oil goes to a nearby small refinery, the bulk of whose regular sales are for local consumption or distribution, then pretty clearly the oil does not go into interstate commerce; although the result would probably be otherwise if a substantial part of the refinery's products generally were sold to distributors or consumers in other states. In conclusion, the attorney stated the opinion that the wage and hour authorities intend, particularly in lines of business which are definitely interstate in their general effects, like the oil business, to go a long way in extending the meaning of interstate commerce or goods produced for interstate commerce.

Trucking Employs More Than Railroads

Highway and local trucking now give employment to millions more people than do the railroads, it was stated last week at the convention of the American Trucking Associations, Inc., at Detroit. The railroads of the country employ altogether approximately one million people. Common and contract carriers alone in the trucking industry employ over a million people. There are now over three million truck drivers in the United States, not including farmers who own and drive trucks. Thousands of former railroad employees are now engaged in highway hauling activities.

Fitts field headquarters of E. H. Moore, Inc., include warehouse, field office, pump repair shop, tool house, and truck garage and repair shop. E. H. Moore, Inc., is the leading producer in the field.

Who Shall Pay For Security?

PRORATION of oil production we are frequently told, is based upon the most efficient methods of producing oil and of extending reserves. True, market demand may be taken into consideration in some states, but protection of oil crude reserves for posterity has been the text of many a legislator talking for proration—and it has been the text of many an oil man who favored it.

True again, the oil man may have favored proration because of its stabilizing effect on the oil business. Unquestionably this thought has been a most important one in his mind.

Now we find that the huge reserves of possible flowing oil which have been built up are contributing a sort of boomerang effect on the crude oil market. There seems to be a disposition to think that this may logically be expected.

However, it seems to us that still another thought can be injected:

Before proration probably 80 percent of the recoverable oil from a well was taken out within a short time, possibly four or five years.

Under proration 80 per cent of the recoverable oil will likely be taken out, in from 15 to 30 years.

It seems obvious that unless the producer gets more money for his oil under proration, overhead and taxes will destroy that which formerly was a profitable business.

The figures given above may not be accurate. They represent simply the estimates we have heard several people make. If anybody has any definite figures they would like to offer, THE OIL WEEKLY would be glad to print them.

On the other hand, there may be those who will say—"Yes, but proration will unquestionably increase the amount of oil recovered."

If anybody has any definite figures on *that*, facts not theories, THE OIL WEEKLY believes that their publication would be very timely.

A Lesson In Disintegration

THOSE independent oil producers who favor disintegration of the oil business, who favor separating by law, the different branches to the point where a refining and marketing company cannot own production, etc., can well take a lesson from some of last week's happenings.

With the independent producer protesting to high heaven against importation of foreign crudes and particularly against dumping of Mexican crudes into the United States, the former head of the Independent Marketers Association announced that his company had made a deal with the Mexican government to bring in still larger quantities of Mexican petroleum products! It would appear, therefore, that the two independent elements in these two branches of the oil industry are working distinctly at cross purposes, as indeed they are.

Their interests are not identical and if there were complete disintegration, the dog-and-cat fights we have had in the past would seem mild to what we could expect.

It should not be forgotten that the Madison trials were instigated by marketers who objected not only to the price of gasoline but to the price of crude oil on which gasoline prices were based.

Readjustments of Are Necessary

By L. J. LOGAN

THE federal wage and hour law, which became effective October 24, is being observed generally by the oil industry and by drilling contractors, and conforming with the law has necessitated considerable readjustments of working hours, particularly among drilling contractors.

The new law has not materially affected the operations of most major oil companies or of some independent companies, inasmuch as both wages and hours in the industry have been exceptionally generous.

However, the new law has forced the companies to work out new schedules in many instances to avoid paying for over-time work at 1½ times regular rates. Previously, they were not so careful, when a few hours extra working of an employe was paid for only at the regular rates.

In this connection, the oil companies are taking the attitude that they will not pay the over-time rates if they possibly can avoid doing so. And so they have worked out schedules under which employes will be held generally within the 44-hour work week prescribed in the law.

In some instances the net result will be employment of some extra workers, although in many instances additional employes will not be necessary.

Some of the companies, particularly the larger concerns, went virtually to the present standards under the National Industrial Recovery Act, and have subsequently maintained or improved the working conditions of employes, and consequently have not faced any particular difficulties in complying fully with the new law.

Similarly, many of the smaller companies and independent operators were following liberal policies toward their employes, and have not been obliged to make any important changes, other than readjustments of working schedules.

The schedules as adopted have been designed variously, to fit the particular situations involved. On drilling wells, for instance, schedules used in marine operations may be different from those in regular land operations, to hold down costs of operating boats in carrying crews to and from work.

One company has worked out a schedule, for example, in which four drilling crews are employed regularly, each working five days a week and each having employment 40 hours one week and 44 hours the next week, or an average of 42 hours weekly. Under this schedule, 8 hour days prevail generally, except that each crew must work one 12-hour day every two weeks.

Thus each crew works one 12-hour day and four 8-hour days, or a total of 44 hours one week and five 8-hour days, or a total of 40 hours, the following week.

Under different conditions, other schedules might be preferable.

Some oil companies as well as drilling contractors have been working three crews 8 hours each on drilling rigs for seven days a week, or a total of 56 hours weekly, and following the effectiveness of the new law have simply put an extra crew on every rig, each working seven 6-hour days or a total of 42 hours a week. In fact, some of the companies already were on that basis.

However, many operators and contractors object to the four 6-hour shifts on drilling wells, as against three 8-hour shifts. For each change-over from crew to crew involves lost motion and inefficiency.

Similarly, it is easy to understand that the workers themselves might prefer working five longer days a week than seven of the 6-hour days.

Consequently, the carefully devised schedules of five days a week per crew are desirable for all concerned.

Nevertheless, drilling contractors in many cases have avoided such schedules, on the grounds that workers who have been off a drilling well two days or even one day have lost touch with it and on returning are not as efficient. Consequently, it has been a wide practice among contracting companies for the crews to work the full seven days a week, eight hours a day. Thus the men would work 56 hours a week while on a job, although they would then be off duty in moving from location to location. One representative firm indicated that its workers averaged about 2000 hours a year.

Under the new wage-hour law, moreover, the drilling contractors have chosen in many instances to maintain the seven-day weeks. They simply have added an extra crew for each drilling rig, and have reduced the hours of the old crews, switching to 6-hour from 8-hour tours. Thus they now have four crews, each working six hours a day for seven days a week; whereas they formerly had three crews, each working eight hours a day for seven days a week.

Under this new policy, more men will be regularly employed, and a considerable demand for workers has arisen in active drilling areas. However, the workers who already were employed have suffered 25 percent decreases in weekly earnings. For example, a driller regularly employed 56 hours a week was earning, at $1.50 an hour, $84 a week; but now, cut down to 42 hours a week, he earns only $63 a week, at the same rate of $1.50 an hour. Similarly, a roughneck, at 93¾ cents an hour, formerly was able to earn $52.50 a week, but now can earn only $39.34 a week. The derrick man and the fireman, at $1 an hour each, have been cut in the same way from earnings of $56 a week to $42.

Similarly, the annual wages of the drilling crew members will be lowered 25 percent, unless the spreading out of work among more men materially reduces unemployment.

The drilling contractors and their workers all have been considerably disturbed by the changes necessitated by the new law. The old workers naturally have objected to

Working Schedules Under New Law

Associate Editor

having their earning possibilities circumscribed, through the 6-hour day, and the morale of the crews has been reduced. At the same time, there is more bookkeeping for the drilling contractor, and he finds that increased inefficiency results from changing crews four times a day instead of three times as formerly.

So far there has been an ample supply of trained men to make up the extra drilling crews put on by the contractors, particularly because of somewhat slack field activity currently prevailing; and no shortage of men is threatened.

Some other drilling contractors have solved the problem under the new law in other ways. For example, some contractors who believe that eight hour shifts are necessary to attain the most efficient results have placed their crews on a four hour day basis, at a lower regular rate than formerly, then permitting 4 hours overtime each day on a basis of time and a half pay, as required by the new law. Thus the driller who formerly was earning $12 a day or at the rate of $1.50 an hour has been cut to $1.20 for the first four hours and is allowed $1.80, or 1½ times the new regular rate, for the other four hours of the day; and for the eight hours he averages $1.50 an hour as before. Similar calculations are made for other members of the crew, who likewise continue to receive the former daily wages, although calculated on an hourly basis.

However, some doubt has been expressed as to the legality of this latter solution to the problem.

Under either of the above two methods, the drilling contractors will not have any material increase in their costs of operation, although some intangible increases, such as possible lowered efficiency, may result.

Consequently, it is anticipated that there are not likely to be any immediate changes in the prevailing prices paid to contractors for drilling wells.

However, some contractors feel that ultimately the hourly wages paid to workmen will have to be increased somewhat to at lease partially compensate the men for the losses suffered in having their hours per day curtailed. For it is doubted if the workers will be able or willing to go along permanently earning 25 percent less per week or per year than they formerly earned. Consequently, it is anticipated that ultimately the contractors may be obliged to pay out larger sums for labor for the same amount of footage drilled, and that they will not be able to continue operating profitably unless they raise their contract prices.

In fact, some of the drilling contractors already have decided to pay slightly higher hourly rates than before, in putting crews on the six hour shifts, so that good workmen could be retained and kept contented.

Gasoline plants and booster stations for oil and gas pipe lines operated continuously have provided considerable new employment under the new law, because of the maximum straight time provision of the act.

The payrolls for lease workers have not been appreciably expanded, except for urgent projects, as labor of that type generally works daylight hours and jobs can be delayed.

An idea as to how much new employment has resulted among drilling contractors may be obtained by considering the experience of one representative contractor, operating six rigs. That firm, in switching to four tours a day from three, is now employing 24 crews, as against 18 formerly, and has added 32 men to its payroll, an increase of about one third.

Drilling contractors as well as oil companies generally believe that they are affected by the wage and hour provisions, because of producing, handling, or being instrumental in such production or handling, of oil, a commodity that goes commonly into interstate commerce. Therefore, the new law is being generally observed among all these companies.

However, rulings have not yet been made by the administrative officials, as to whether or not independent oil companies, not doing interstate business, are affected by the act. Some attorneys are of the opinion that any producer selling oil only at the well is not likely to be considered as being engaged in interstate commerce and therefore as being subject to the wage-hour provisions. On the other hand, some of the wording of the law indicates that such an operator would be affected, as he produces a product that ultimately goes into interstate commerce.

Similarly, some attorneys contend that drilling contractors do not come under the act, because they are not producing oil. But on the other hand, the law quite possibly may be interpreted as affecting the contractors, as it covers employes engaged in work necessary to the production of goods going into interstate commerce.

The wage and hour provisions of the act apply to the following:

(1) Employes engaged in producing, manufacturing, mining, handling, transporting, or in any manner working on goods moving in interstate commerce;

(2) Employes engaged in any process or occupation necessary to the production of such goods;

(3) Employes engaged in interstate transportation, transmission, or communication.

The exemptions from the wage and hour provisions that are applicable in the oil industry include:

(1) Persons employed in bona fide executive, administrative, professional, or local retailing capacity, or as outside salesmen;

(2) Persons employed in any retail or service establishment, the greater part of whose selling or servicing is in intrastate commerce;

(3) Persons engaged as seamen.

The law, effective October 24, restricted the work week to 44 hours and made 25 cents an hour the lowest permitted wage. Work above 44 hours weekly must be paid for at the rate of 1½ times regular pay. The oil companies and drilling contractors have been paying far more than the prescribed minimum wage, but in some instances have been keeping men at work more than 44 hours weekly, and to avoid paying overtime have had to revise work schedules and put on more men.

A wildcat requires a temporary road. If it pays off this road will be hard surfaced.

Eastern Venezuela

of Increasing Importance

EASTERN Venezuela seems destined to occupy an increasingly important position in the oil industry for the next few years. It has already set an example for the industry elsewhere in matters social and economic in the matter of the relationship between corporate business and the people. The improvement of its transportation and communications systems in the recent few years has been nothing short of phenomenal.

Men in Eastern Venezuela are doing things and going places, whether it be in the realm of applying geophysics, wildcatting, proven-area drilling, production technique, oil and material transportation.

But the progress made in Eastern Venezuela cannot be attributed solely to the engineering and executive brains sent into the country in the early years of development. Much of the success is rightfully attributed to manner in which the Venezuelans employed by the companies have, by their actions, taken cognizance of the axiom that the personal welfare of an employe rises and falls with that of his employer. Many Eastern Venezuelans have applied themselves assiduously to the task of learning the oil business, with the result that they hold important positions. The writer met and talked with some of the Venezuelans who are rated as old timers in Eastern Venezuela oil. These are the ones whose children began to benefit from the first of the schools established by the oil companies. And while the oil camp schools they attend might be rated in the United States as rural schools (the oil camps are all in what we would call the country in the United States) there seemed to be no comparison between the alertness and physical fitness of these oil camp school children and some of those encountered in the smaller villages. And what's more, the chicos are learning the oil business by absorption in childhood and many of them will fill important niches in tomorrow's oil industry.

While the region has only four fields listed as what we would call commercial producers, currently yielding an aggregate of slightly over 86,000 barrels daily, the importance of Eastern Venezuela lies not in today, but in tomorrow, and definitely so.

Before dealing with the fields in Eastern Venezuela, let's look at a few of the important wildcat, or exploratory projects.

Most important of all, because of its "hotness," the writer would put Jusepin, where Standard Oil Company of Venezuela struck oil during the week ending September 15. Jusepin is in the state of Monagas. District of Maturin. It is about 20 miles west of Maturin, where the same operator had a wildcat to blow out and catch fire, and about

30 miles southwest of Quiriquire, whose current daily production of 67,041 barrels rates it as the greatest field in Eastern Venezuela. On October 11 Jusepin 1 encountered an oil sand which on test produced at the rate of 750 barrels of 30 A.P.I. gravity oil from about 4900 feet.

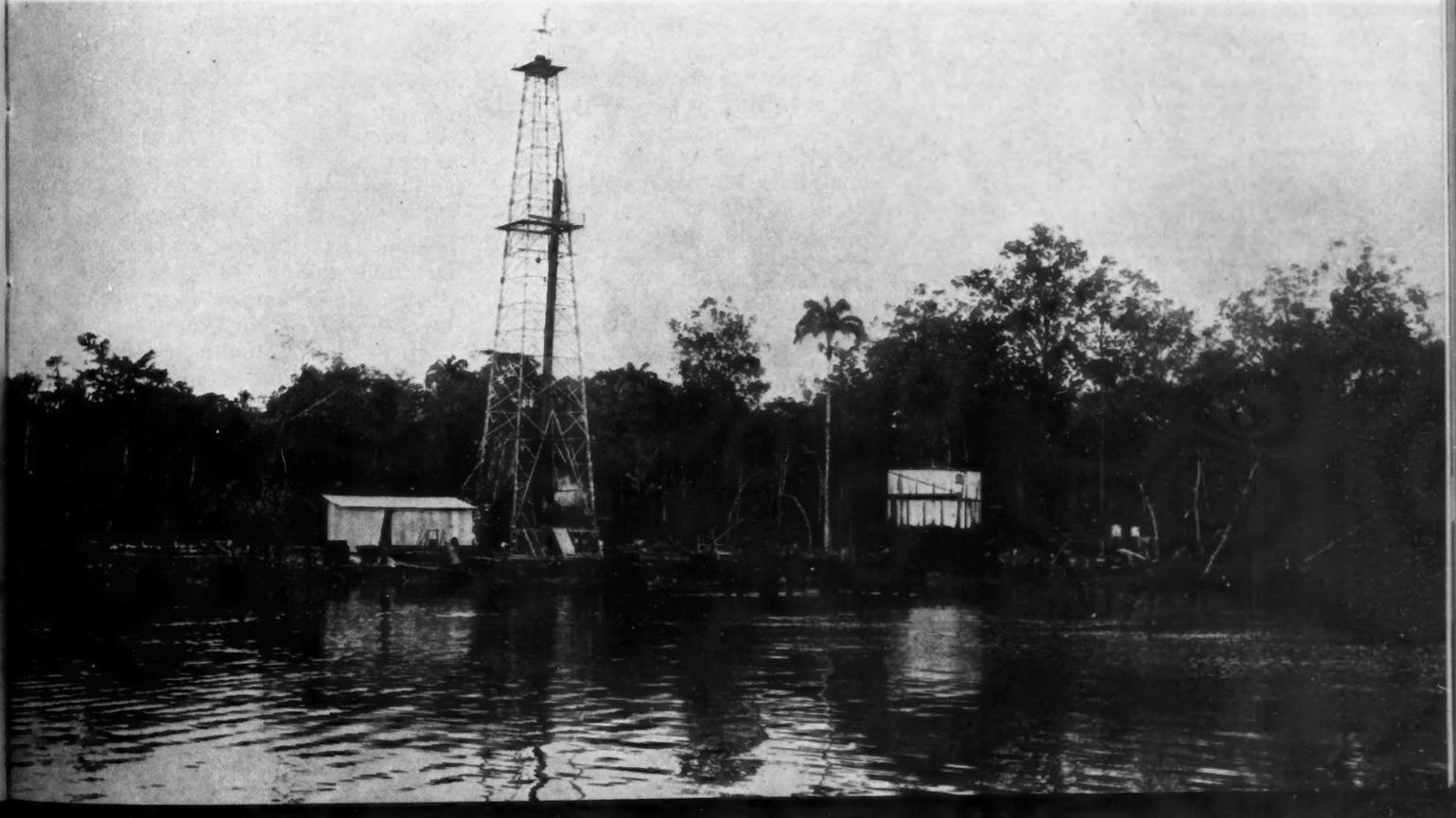
The specific type of the structure at Jusepin is not known. A second location is being made, but the staking thereof will be governed largely by terrain and not by the compass. Jusepin is one of these up and down babies like Quiriquire, as may be imagined when it is known that it takes two hours to negotiate the 30 miles separating them in an automobile. And this reminds the writer of the company chauffeurs. The thrill a novice feels on his first airplane flight at discovering, after thinking for several minutes that something has gone haywire with the rudder or engine, that the pilot has merely picked a rough area to do blind flying at about 10,000 feet, is nothing compared with that he experiences on his first ride through the hills, or mountains, of Eastern Venezuela. But the drivers know their business, and if your heart is not weak enough to cause you to pass out during the first two miles, you are soon convinced of it and feel perfectly safe — well, reasonably safe. The speedometers are calibrated in kilometers, and when one who has lived all his life in the states looks down and sees the needle pointing to 40 when the car is rounding a curve on the edge of the mountain, he naturally thinks of miles per hour and wonders if the car will make it or drop off the edge a hundred feet to the road below. Then the boy says, "Senor, the instrument is in kilometers, not miles." And then the newcomer sighs, "Ah!" and his heart settles from his mouth, to where it has jumped, back down to thorax, conservatively speaking. A steel line measurement would probably reveal resumption of normal position at about the 15-kilometer mark out of Caripito.

This article was written by William V. Gross, The Oil Weekly's foreign editor, while in Caripito on his tour of South American oil areas. Articles on other regions will appear in forthcoming issues.

Highly important among areas which will be listed as commercial producers soon is Oficina, Mene Grande Oil Company's project in the State of Anzoategui, District of Freites. It is 170 kilometers west of Temblador field. Thus far Mene Grande has recorded four completions on the prospect to get the lay of the land. One of these, Oficina 1, drilled to 6184 feet, plugged back to 5995 feet, and was brought in for 600 barrels through 3/8-inch choke. Gravity was 28.6 A.P.I.; tubing pressure, 1250 pounds; casing pressure, 1800 pounds.

Mene Grande Oil Company, a Gulf interest, apparently is well satisfied with the outlook for Oficina, having moved six steam rotaries to the spot. They are all busy, as a drilling report of Oficina wells October 15 revealed the following: No. 5, preparing to test a light oil show at 5934 feet; No. 6, coring at 5734 feet and obtaining the usual oil shows, eventual com-

Steam rig used on San Joaquin River where Standard Oil Company of Venezuela is operating jointly with Mene Grande Oil Company. It is in District of Aragua, State of Anzoategui.



Drilling in Venezuela

1937 New Well Completions

District—	Producers	Dry Holes	Total
Quiriquire	58	0	58
Cumarebo	13	0	13
Pedernales	6	0	6
Temblador	11	5	16
*Eastern Venezuela	0	5	5
Oficina	2	0	2
Total	90	10	100
First Nine Months of 1937			
Quiriquire	43	0	43
Cumarebo	11	0	11
Pedernales	4	0	4
Temblador	4	1	5
*Eastern Venezuela	2	4	6
Oficina	2	0	2
Total	66	5	71
First Nine Months of 1938			
Quiriquire	32	0	32
Cumarebo	6	0	6
Pedernales	3	0	3
Temblador	30	4	34
*Eastern Venezuela	0	1	1
Oficina	4	1	5
Total	75	6	81

*Eastern Venezuela wildcats.

pletion as producer assured barring mechanical troubles; No. 7, completed at 5310 feet; No. 8, location; No. 9, drilling at 5557 feet and showing for a producer; No. 10, drilling at 1252 feet; No. 11, location; No. 12, drilling at 4890 feet.

Oficina's outlook is the reason for projecting one of the most important developments scheduled for completion in 1939. It is the 100-mile, 16-inch line which will eventually run from Oficina to Guanta, one of the largest, deepest and most beautiful natural harbors in the world.

In starting preliminary work for the line, Mene Grande Oil Company, the builder, offers a striking example of the foresight essential to profitable development of a virgin Venezuelan concession far removed from consuming centers. It took vision and courage to embark on a 100-mile, 16-inch proposition when the shut-in production of the field was less than 4000 barrels a day. Today it is around 5000 barrels, but by November 15 is expected to amount to between 7500 and 10,000 barrels per day.

A daily capacity of 75,000 barrels is figured as normal operating capacity for the 16-inch line with the equipment contemplated. However, the line can be made to handle 100,000 barrels per day with ease without looping, it is said. It is figured that by mid-November the wrinkles will be largely worked out of the drilling at Oficina and that completion time of the wells will be cut down to 45 days, which would mean 8 completions per rig per year. Cutting two off this average for accidents and for rigging up and tearing down, Oficina should have 36 more wells on production by late 1939, when completion of the line is expected. Hence, the welded line should start off with initial runs of not less than about 25,000 barrels daily, which will rank Oficina as East Venezuela's second largest producer when the production figures for 1939 are turned.

Starting in the south at Oficina, the route of the line going north to tidewater at Guanta will be by way of Cachama, Cantaura, Anaco (San Manuel), Caicaito, San Mateo, Quiamara, and thence to Guanta.

At Oficina, the elevation is 900 feet. This gradually drops to 200 feet at Quiamara, giving the line a down hill run for fully three fourths of its length. Between Quiamara and Guanta it will have to cross two 450-foot peaks, Boca de Tigre and Cerro Grande, and a 350-foot peak, Cerro Montones. After crossing the first of the higher peaks, the line will drop down to country with less than 100 feet of elevation in the old bed of the Rio Capiricual. Then it will have to cross the second 450-foot peak, Cerro Grande, and drop to the level of Rio Neberi, which is less than 50 feet above the sea. Then the line must rise again to cross Cerro Montones before beginning the final downgrade run to Guanta.

Tentative plans call for erection of pump stations at Guanta and Oficina and assume possible necessity later for a booster station at San Joaquin in the Santa Ana area.

The southern field terminal, or pump station, will be at San Tome, near the Oficina warehouse, camp and general office, and six kilometers north of the field. Initial equipment will consist of two 600-horsepower gas engine generating units and three 600-horsepower gas engines driving power pumps. Steel is being unloaded at Ciudad Bolivar, nearly 100 miles to the south of Oficina, for four 96,000-barrel tanks which will be erected at the southern end of the line.

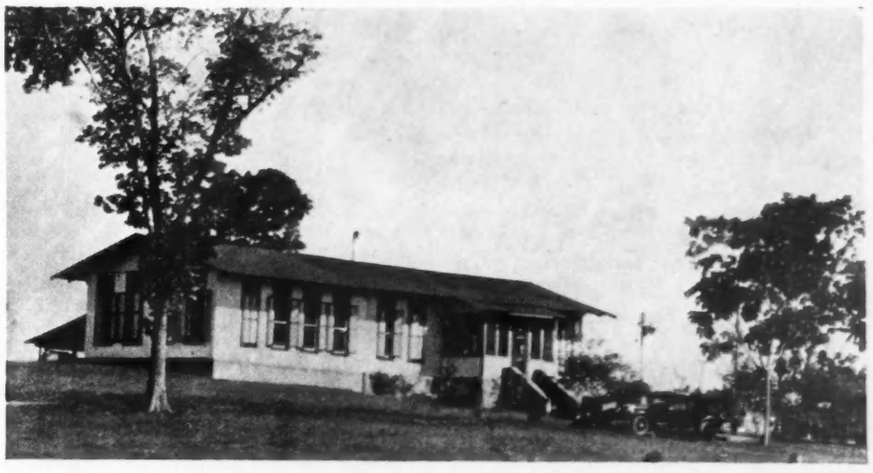
Guanta's station will start operations with three 500-horsepower Diesel-electric units. The initial tankage program at Guanta calls for 10 conical roof tanks of 96,000 barrels capacity each. Later Mene Grande Oil Company will erect four 135,000-barrel floating roof tanks on a hill overlooking Guanta and load seagoing tankers by gravity.

Contract has already been let for the material wharf at Guanta and tanker slips will be built later.

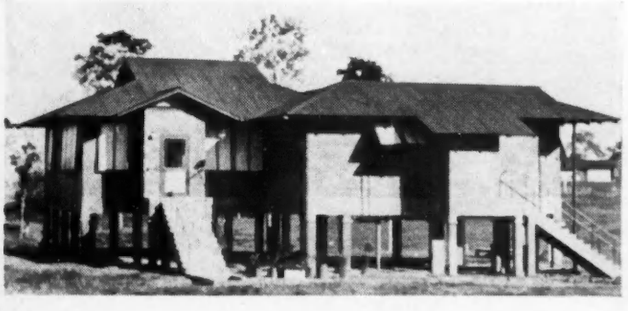
Building a 16-inch welded line of the type mentioned in this article is somewhat different from a similar undertaking in the United States. In Venezuela it means Mene Grande Oil Company will have to build a double width road all along the line. A double width road (18 feet) calls for a clearing through jungle and savannah 50 feet wide. About 20 miles of this road, that is, from Oficina to Cantaura, has been finished. June 30 is the self-imposed deadline for finishing it. Stringing pipe will start about January 1, depending on the strenuousness of Venezuelan

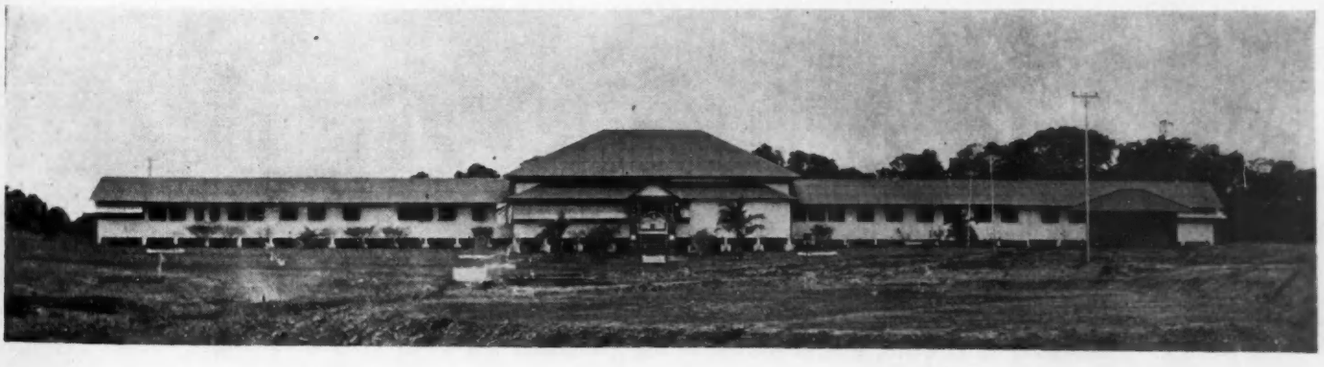
How Workers Are Housed in Venezuelan Oil Camps

Above and below are views of typical living quarters provided by Standard Oil Company of Venezuela for its workers. Brick and tile for these houses are made in the company's own plant. At bottom of the page is the hospital at Quiriquire.



Mess hall at Caripito. The meals here soon persuade a stranger to stop being sorry for the men who work in the Tropics.





Christmas holidays and ship arrivals.

Mene Grande Oil Company, Standard Oil Company of Venezuela, and others are interested in what is known as the Aceital prospect, which is 15 kilometers north of Temblador field (currently producing 7142 barrels) and is in municipality of Tabasca, District of Sotillo, State of Monagas. Standard Oil Company is doing the operating, having been hung up on a fishing job for some time. Aceital is down to 6993 feet. Manifestly, Aceital cannot be condemned until more drilling has been done. In this connection, a seismograph crew is working, doing detail work, southwest of Aceital between San Antonio de Tabasca and El Rosario.

It is a job to get to Aceital from Caripito, operating headquarters for all East Venezuela. You have to make an overnight trip down the San Juan River to the Gulf of Paria and across a corner of it to Pedernales, thence up Cano Manamo by boat for about 8 hours to Puerta Amador. Then it is a 50-kilometer ride to Temblador in an automobile and another 15-kilometer ride north to the rig.

Venezuelan Oil Development Company (Shell) is moving in materials for a test of the new prospect called Cerro Negro, located in the State of Monagas about 65 kilometers southwest of Temblador field on the Rio Morichal Largo. Location for the test was made this summer as a result of findings of a seismograph crew headed by George Augustat of Dallas, Texas. Access to the wildcat thus far is primarily by way of Ciudad Bolivar on the Orinoco River.

Orinoco Delta Wildcat

On the east bank of Cano Macareo, Delta of Amacura, which is the Orinoco River delta, Standard Oil Company of Venezuela has an interesting wildcat. Los Indios 1 is 25 kilometers southeast of Tucupita, or 95 kilometers east of Temblador. There is no road to or landing field at Los Indios, so the visitor must go by boat to Pedernales and thence 3 days on a launch up Cano Macareo. The rig is mounted on a foundation of piling and the crew lives in a houseboat. Communication with Caripito is by radio. When sitting in the houseboat a visitor is apt to hear such a message to Caripito: "Calling Caripito. Calling Caripito. Indios 1 fishing for stuck drill stem at 4047 feet. Send new overshot by next launch. Indios signing off." (That is the depth at Los Indios, by the way. The fact that the wildcat has had no commercial shows thus far had been taken care of before the fishing started.)

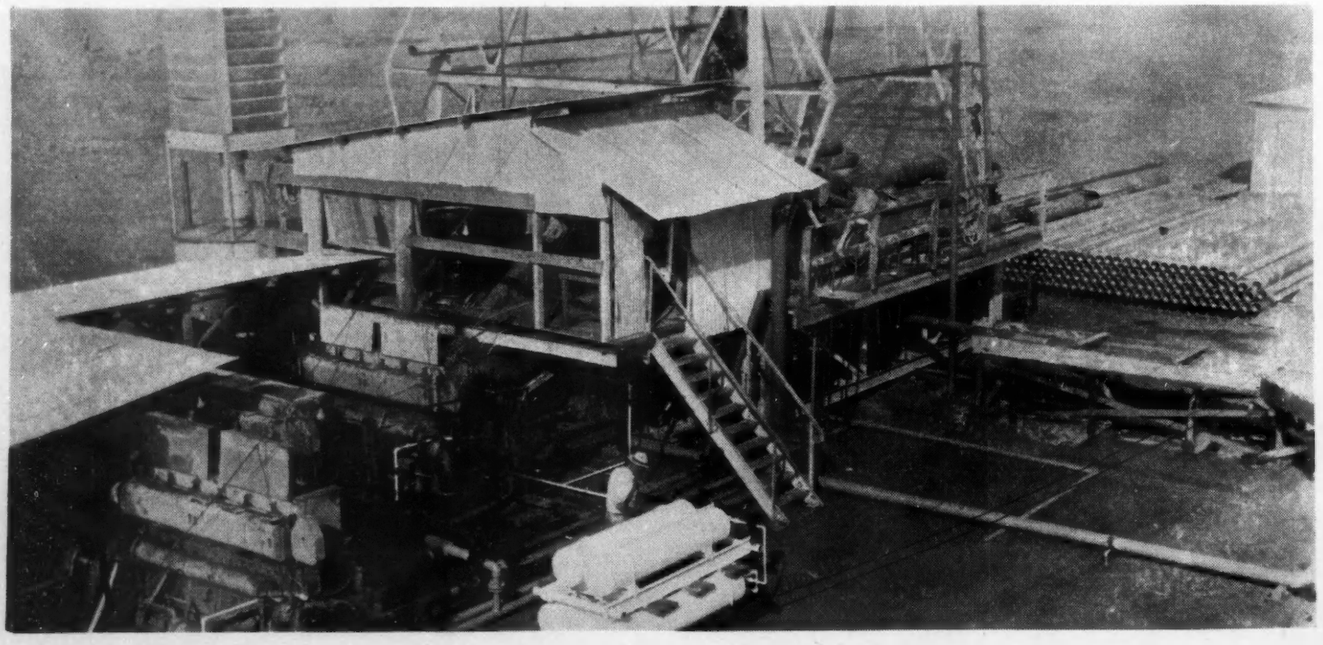
The Los Indios well is located on a concession of about 160,000 hectares, or the equivalent of nearly 400,000 acres, and it is safe to prognosticate that more than one wildcat will be drilled, regardless of the outcome of No. 1.

Roble prospect, accessible by car in one day or by plane in 30 minutes from Caripito, is in Anzoategui's District of Aragua, Municipality of Santa Ana. It is about 160 kilometers southwest of Quiriquire field, or 70 kilometers northwest of Mene Grande Oil Company's wildcat operations at Oficina. Standard Oil Company's Roble 1, being drilled with straight Diesel, is shut down for mechanical repairs at 9206 feet after having chalked up the record for deepest well in Venezuela, and probably in South America. The wildcat has had a few shows—one at 7000 feet was small and heavy, as was one around 8000 feet. Drilling will be resumed as soon as new parts can be got to the location, so the test may eventually put Venezuela and South America in the 10,000-foot class, something they have not qualified for as yet.

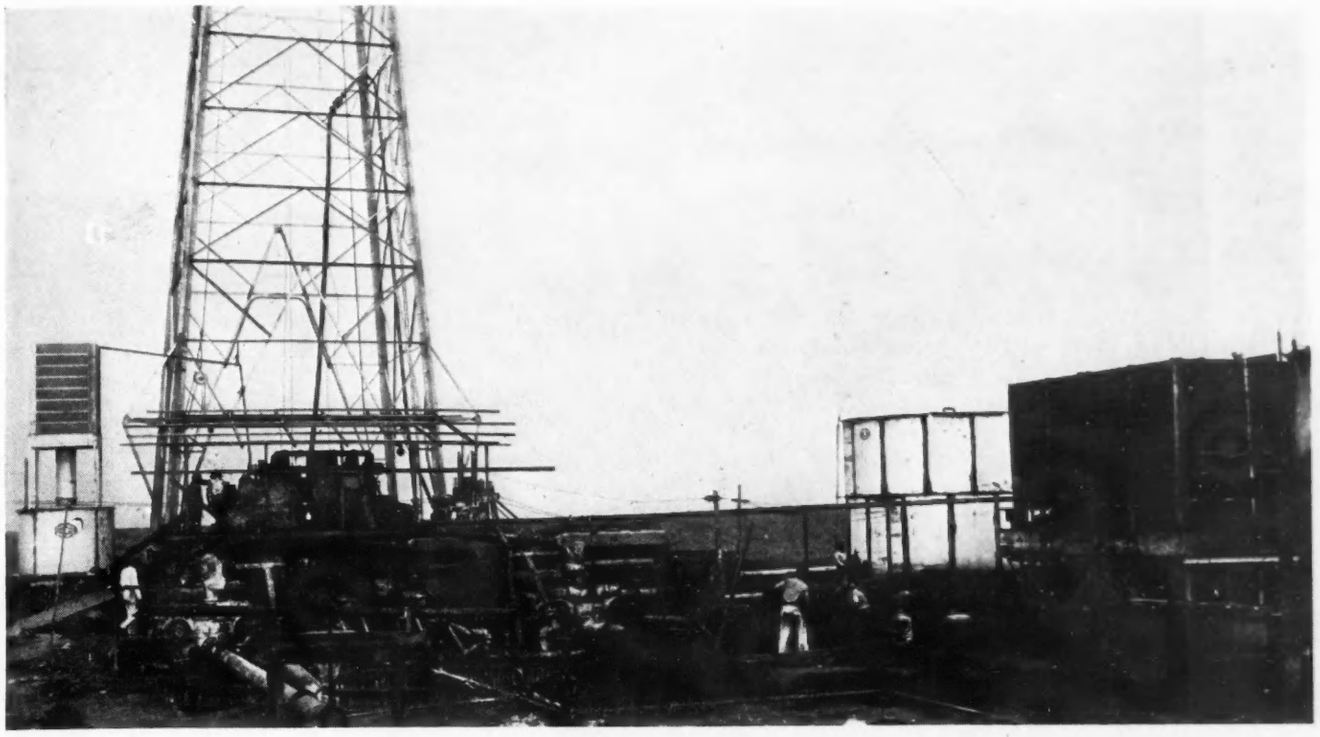
In the same state and district with Roble, but in the Municipality of San Joaquin, Standard Oil Company and Gulf are cooperating in developing what is called San Joaquin prospect, with Standard Oil Company of Venezuela doing the operating, there being two steam rotaries on the job. One of these is on San Joaquin 1, about 14 kilometers south of the town of Roble, and the other is San Joaquin 2, located 8 kilometers south of Roble.

Of the two wildcats busy at San Joaquin, No. 1 is coring at 4393 feet with no shows, while No. 2 is shut down for fuel oil at 3719 feet with no shows.

Like El Roble, San Joaquin can be reached from Caripito by a car



Diesel rig at El Salto, wildcat project in the Temblador district of Eastern Venezuela.



Eastern Venezuela wildcat being drilled with a Diesel rig.

in one day or by plane in 30 minutes.

In the same general part of Venezuela, Mene Grande Oil Company is operating for a joint account with Standard Oil Company to wildcat rigs on the Santa Ana prospect, State of Anzoategui, District of Aragua, municipality of Santa Ana. Commercial production on this prospect, 50 kilometers northwest of the previously mentioned Oficina, was established by Mene Grande's Santa Ana 1.

Santa Ana 2 is drilling below 7155 feet, where a core afforded no show. Santa Ana 3 is coring around 5522 feet without a showing.

Two wells have been completed at Tabasca, but they have been produced only for test purposes. Tabasco is 10 kilometers east of Temblador. Tabasca 1, the discovery well, was brought in from 4372 feet for 400 barrels daily of heavy oil after plugging back from 4973 feet. Urucoa 1, the only other well completed there, went to 5601 feet, record depth for the area, and plugged back to 4303 feet.

Tabasca prospect is controlled by Pantepec Petroleum Company, Mene Grande Oil Company and Standard Oil Company of Venezuela, with the latter holding the largest interest.

The foregoing sums up the status of prospects on which data were available at the writer's stops in Venezuela. It is almost a complete picture of the set-up, but an attempt will be made to develop additional information on the omitted prospects later in Caracas or Lake Maracaibo.

But the picture on the wildcats would be incomplete without a brief mention of activities of geophysical crews in Eastern Venezuela. Taking these by companies, three crews are working for Caribbean Petroleum Company. One was east of Maturin camp, State of Monagas, about three kilometers; one was east of Oficina about 25 kilometers, and in the District of Apure was working about 30 or 35 kilometers west of San Fernando de Apure.

Standard Oil Company of Venezuela has a crew working in each of three states. One is 15 kilometers southwest of Santa Ana in Anzoategui state; one is working 15 kilometers west of San Antonio de Tabasca in Monagas state, and a crew is busy between Zaraza and Santa Maria de Ipire in the State of Guarico.

Socony-Vacuum Oil Company has a crew busy on and around San Joaquin structure where it has concessions near Standard Oil Company of Venezuela's active wildcat operations.

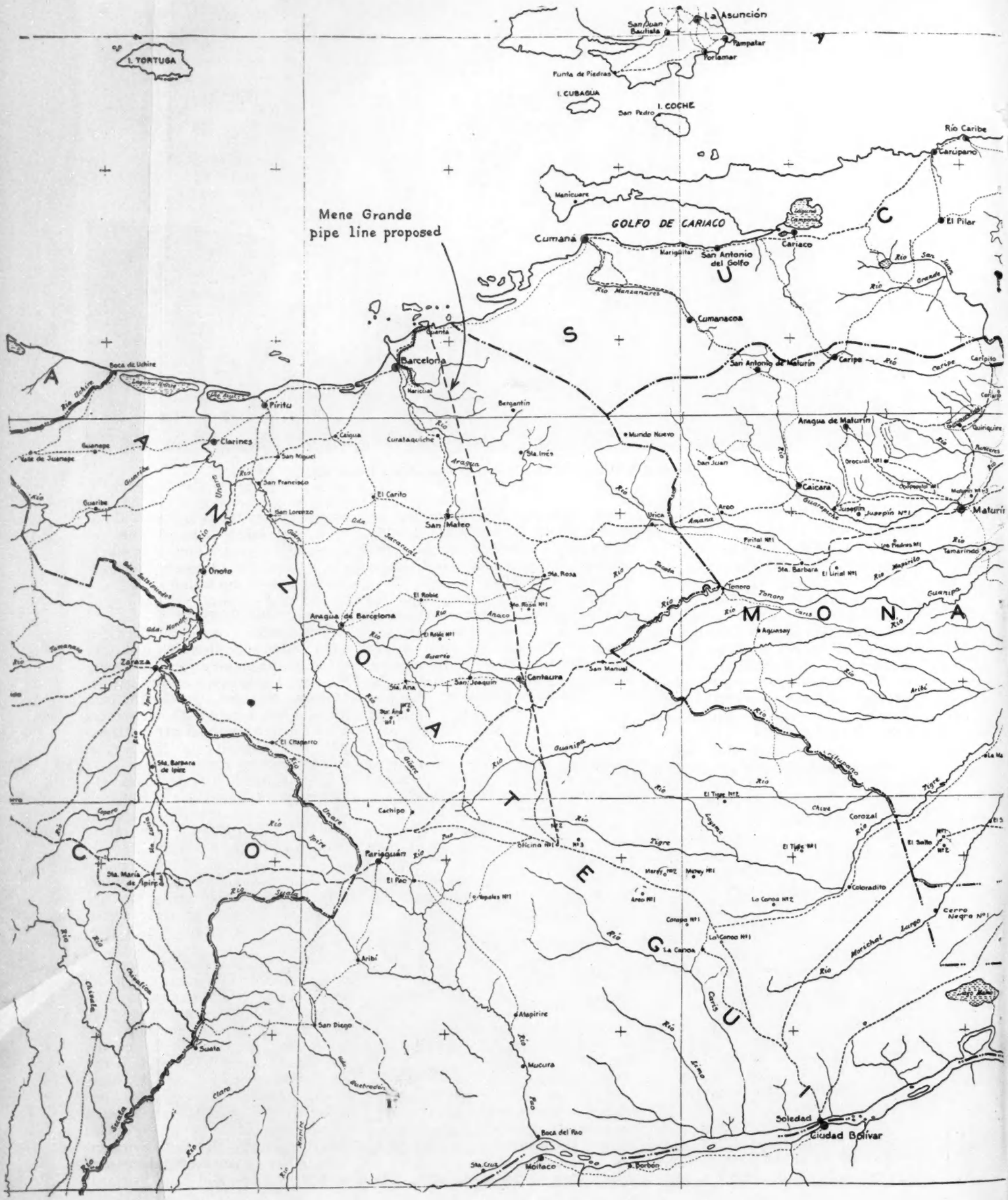
It should be observed here that geophysics has been a great aid to prospecting in Venezuela. But it should be observed, too, that it is not a panacea. There are spots in which one or more or all of the recognized methods simply will not work. On the other hand, there are spots in Eastern Venezuela where plain surface geology unaided would not be revealing.

Quiriquire Field

Quiriquire is and has been for some time the spot which furnishes most of the money for developing Eastern Venezuela's additional petroleum reserves. Quiriquire is a great field, located 27 kilometers from Caripito in the State of Monagas, near the city of Maturin in the District of Piar.

Discovered by Standard Oil Company of Venezuela's Monat 1, completed as a small producer at 2345 feet in 1923, the Quiriquire field had produced 117,792,015 barrels to the end of September. While it has a potential of 78,000 barrels, good engineering practice indicates the current recovery of about 67,000 barrels daily satisfactory.

Quiriquire, a Younger Tertiary proposition trending north 70 degrees east, has a series of producing formations ranging from 1500 to 3400 feet, with the average completion depth around 3000 feet, the oil coming from most wells being 17 to 18 gravity, asphalt base. These formations are divided into three groups, the West Segment sands having an average pressure of 1165 pounds, the East Segment Lower having an average pressure of 1160 pounds, and East Segment


Mene Grande
pipe line proposed
I. YORTUGA
La Asunción
San Juan Bautista
Pampatar
Porlamar
Punta de Piedras
I. CUBAGUA
I. COCHE
San Pedro
Río Caribe
Carúpano
Manicuare
GOLFO DE CARIACO
Cumaná
Mariguitar
San Antonio del Golfo
Cariaco
El Pilar
Río Manzanares
Cumanacoa
Barcelona
San Antonio de Maturín
Caripe
Boca de Uchire
Laguna Uchire
Píritu
Bergantín
Clarines
Caigua
Curataquiche
Santa Inés
Mundo Nuevo
Anaqua de Maturín
Quiriquire
San Miguel
San Francisco
El Carito
San Lorenzo
San Mateo
San Juan
Caicara
Maturín
Juasipín
Areo
Urica
Onoto
Santa Rosa
Tonero
Santa Bárbara
Tamarindo
El Robie
Anaqua de Barcelona
Aguasay
Zaraza
Centaurro
San Manuel
Santa Ana
San Joaquín
El Chaparro
Santa Bárbara de Ipire
Cachipo
Pariaguán
El Pao
Santa María de Ipire
Oficina Nº 1
El Tigre
Corozal
Coloradito
Cerro Negro Nº 1
La Canoa
Aribi
Altagracia
San Diego
Suata
Mucura
Boca del Pao
Soledad
Ciudad Bolívar
Moitaco
San Borbón
Santa Cruz

11°
10°
9°
8°
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GOLFO DE PARIA
TRINIDAD
Port of Spain
San Fernando
La Brea
Cristóbal Colon
Irapa
Güiria
Yaguarapano
Guariquén
Morrocoy Nº 1
Lago de Asfalto
Pedernales
EL SOLDADO
I. COTORRA
TERRITORIO FEDERAL DELTA AMACURO
G A S
Los Aceites
Boca de Uracoa
El Rosario
Uracoa
Tucupita
Barrancas
Los Indios
Los Remolinos
Curiapo
Boca Grande
San José de Amacuro
Río Orinoco
Río Uracoa
Río Grande
Río Tigre
Río Manamo
Río Araguao
Río Amacuro
Caño Mariusa
Caño Araguito
Caño Guasina
Caño Sacuana
Caño Jobure
Caño Pilotes
Caño Manamito
Caño Macareo
Caño Pedernales
Caño Coporito
Caño Mocoina
Caño Guanipa
Caño Colorado
Caño Guariquén
Caño La Brea
Caño Tigre
Caño Morichal
Caño Larga
Caño Caoura
Caño Pedernales
Caño Manamo
Caño Araguito
Caño Araguao
Caño Mariusa
Caño Guasina
Caño Sacuana
Caño Jobure
Caño Pilotes
Caño Manamito
Caño Macareo

Building road to move in material for another location in Quiriquire.

Upper having an average pressure of 958 pounds.

Although the sands of Quiriquire are extremely lenticular, the sand section, including shale breaks, is often found to be as much as 1000 feet thick. But despite the lenticularity, 271 out of 280 attempts resulted in oil wells. One of the remaining eight was a gas well. Of the cumulative total of producers, 160 are flowing and 33 are on individual pumping units powered by internal combustion engines. Closed in producers number 55, while abandoned ones total 3.

Quiriquire's drilling program calls for completion of 40 wells before the end of the year, which was about the rate of development in 1937. Most of the wells are brought in on the swab, the practice of washing in having been abandoned due to the drop in pressure. Completion is effected through a perforated pipe or slotted liner. The ordinary casing program calls for 10¾-inch, 40½-pound pipe to 350 feet and 6⅝ combination strings to bottom. Some wells, however, use 13⅜-inch surface pipe, an 8⅝-inch water string, and 4¾-inch liner, though the latter program was used primarily on old completions and on geological tests.

Quiriquire drilling is generally fishtail down to 1500 or 2000 feet, from there on down calling for hard formation bits.

Repressuring Experiment

Repressuring is still largely an experiment in Quiriquire, and while results are not expected immediately it is hoped that the gas storage will help later in the field's life. Three input wells are being used to inject 6,000,000 cubic feet of gas daily. Two of these are on the gas cap and the other is in a low-pressure area. An arrested decline curve has been noticed around the input wells in the gas cap area, but the one in the low pressure area has not been used long enough to obtain results.

Other drilling and production practices observed at Quiriquire included the following: 122-foot derricks, steam rigs, and 4½-inch drill stems are generally used. Coring is straight rotary coring, although electrical logging is used prior to completing the deeper of twin wells (which is always completed first). In the eastern part of the field twin wells, spaced 30 feet apart, are the practice, the deeper taking in the lower section, the shallower taking in the upper sand. In other parts of the field a spacing program of about 300 meters (one meter equals 3.29 feet) is used.

In the matter of pressures encountered while drilling, most of the hazard is furnished by shallow sands. One at around 200 feet has remarkably upsetting possibilities, and another, usually found around 1000 feet is less serious, though still dangerous. After these two relatively shallow high-pressure sands are passed, little difficulty is encountered, although all wells carry blowout preventers to bottom.

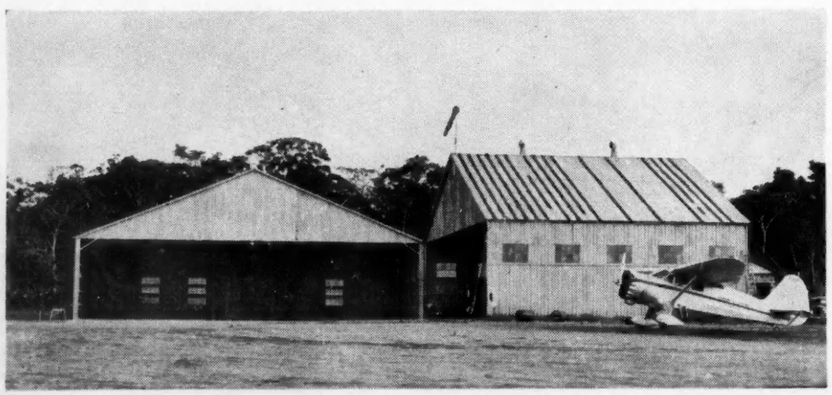
New Field at Temblador

Temblador, a relatively new field for Eastern Venezuela, is in Municipality of Tabasca, District of Sotillo, State of Monagas, a two-day trip from Caripito by boat and automobile combined, but only one hour from Quiriquire in a plane. The discovery well, completed two years ago at 3960 feet for an initial of 1760 barrels, produced 23.6 gravity oil. Today the average gravity of oil produced in Temblador is 22.5 degrees. Present completions in the field are effected at from 3800 to 3875 feet.

The field now is 30 kilometers long, but only ½ to 1½ kilometers wide.

Of the 51 Temblador completions recorded 41 were producers and 10 were failures. The deepest of these was No. 1, the discovery well, which went to 4980 feet before plugging back to complete. So far 4229 acres have been proven, and the field is not defined on all sides.

Cumulative production of Temblador from discovery through September 30 was 1,710,000 barrels, 1,630,500 barrels of which was pro-



Airplanes offer the only practical means of getting around to some operations in Eastern Venezuela. Standard Oil Company keeps two planes busy out of the above company airport at Cachipo, near Caripito.

WHAT BEARING SHOULD I SPECIFY FOR MY OIL FIELD EQUIPMENT?

[THE SECOND OF A SERIES OF QUESTIONS TO HELP SOLVE THE PROBLEMS OF BEARING BUYERS IN THE OIL INDUSTRY]

Before selecting the make of bearing to use in your equipment, don't you owe it to yourself to get answers to these questions from any bearing manufacturer whose product you are considering? The answers as applying to the TIMKEN Tapered Roller Bearing are included below.

What credit rating and financial resources are behind the bearing?

The Timken Company is a $45,000,000 corporation with the highest attainable credit rating. It has always been a successful profit-making institution.

What size organization is behind the bearing?

The Timken Company normally employs nearly 10,000 people; has over 2,400,000 sq. ft. of machinery and equipment under roof; is world-famous for the size and scope of its engineering corps; its research departments; and its chemical, metallurgical and physical research laboratories. In its tool rooms alone 600 men and nearly as many machines, are normally employed. Thousands of precision machines are used, yet one-third of the factory force is devoted to inspection.

Is sufficient production capacity available to take care of customers during "peak" periods?

TIMKEN Bearings are made in factories at Canton and Columbus, Ohio, and there are associated factories in England and France. United States plants alone have a monthly capacity of 6,000,000 bearings—with ample resources for increasing capacity as needed.

How many sizes of bearings are included in the line?

The Timken Company has over 2,500 sizes to select from, ranging in size from an inch OD to bearings of 56 inches OD and weighing 3½ tons and having a capacity of 8,000,000 pounds at 30 R.P.M.

Do the bearings have a successful performance record in heavy duty service such as steel mills?

TIMKEN Bearings are used on the roll necks of most of the steel mills built during the last few years. Some TIMKEN Bearings have rolled upwards of 3,000,000 tons of steel and are still in good condition.

Do the bearings have a successful performance record in heavy duty service such as railroads?

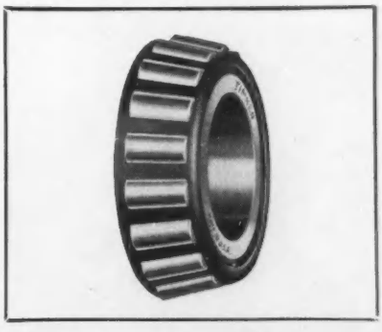
TIMKEN Bearings are used on a large majority of America's new high speed streamlined trains and locomotives.

Do the bearings have a successful performance record where a high degree of precision is required?

TIMKEN Bearings are used on the spindles of over 95% of new heavy duty machine tools—one of the most exacting precision jobs in all industry.

What popular demand is there for the bearing, as a result of widely known performance, or advertising?

The TIMKEN Bearing has, on its own merit, become known the world over for its superior performance. In addition, 40 years of national advertising (representing an investment of many millions of dollars) have made TIMKEN Bearings known wherever civilization exists, with the result that any product in which they are used immediately becomes identified as a *better product*—and also a better and faster selling product. In short, TIMKEN Bearings give a Reflection of Quality to the whole machine in which they are used.



TIMKEN
TAPERED ROLLER BEARINGS

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

duced in the first 9 months of this year. Current production is 7142 barrels daily. The oil goes by line 50 kilometers to Boca de Uracoa on Cano Manamo, and thence by barge to Guiria for export transshipment. Guiria, on the Gulf of Paria, is where the company's sea loading lines and terminal are located.

Standard Oil Company is operating Temblador for Logo Petroleum Company and Mene Grande Oil Company.

Pedernales

Pedernales is in federal territory, the Delta of Amacuro, at the mouth of Cano Manamo, which puts it about 95 kilometers east from Quiriquire. Like Temblador, Pedernales is a relatively new field, having been discovered August 11, 1935, by Amacuro 1, which made 1000 barrels of 21-gravity oil through 5/16-inch choke when completed at 5177 feet. Present production at Pedernales comes from sands found between 5000 and 6000 feet. The oil is 21 A.P.I. gravity. Well pressures range from 1901 to 2807 pounds, but the average for the field is 2282 pounds.

Seventeen completions, 13 of them producers, have been recorded in Pedernales. The deepest of these was Cotorra 6, which went to 7853 feet before plugging back to complete. It now produces from 6048-6372 feet, flowing 600 barrels daily through ¼-inch choke.

Cumulative production of Pedernales to October 1 was 2,931,300 barrels, of which 1,400,400 was produced in the first 9 months of this year. Current daily average is around 5000 barrels, although the potential is about 7500 barrels. Pedernales crude has a sulphur content of about 3.0 percent, but all the wells on production there are flowing.

Cumarebo Field

Standard Oil Company of Venezuela operates Cumarebo field jointly for North Venezuelan Petroleum Company. It is in the northwest part of the District of Zamora, close to the northern shore of Venezuela, and in the State of Falcon. Cumarebo was discovered in 1931 and has produced 21,210,903 barrels from the several different pays which have been found in the field between 500 and 2500 feet. All the horizons produce approximately 50 gravity oil.

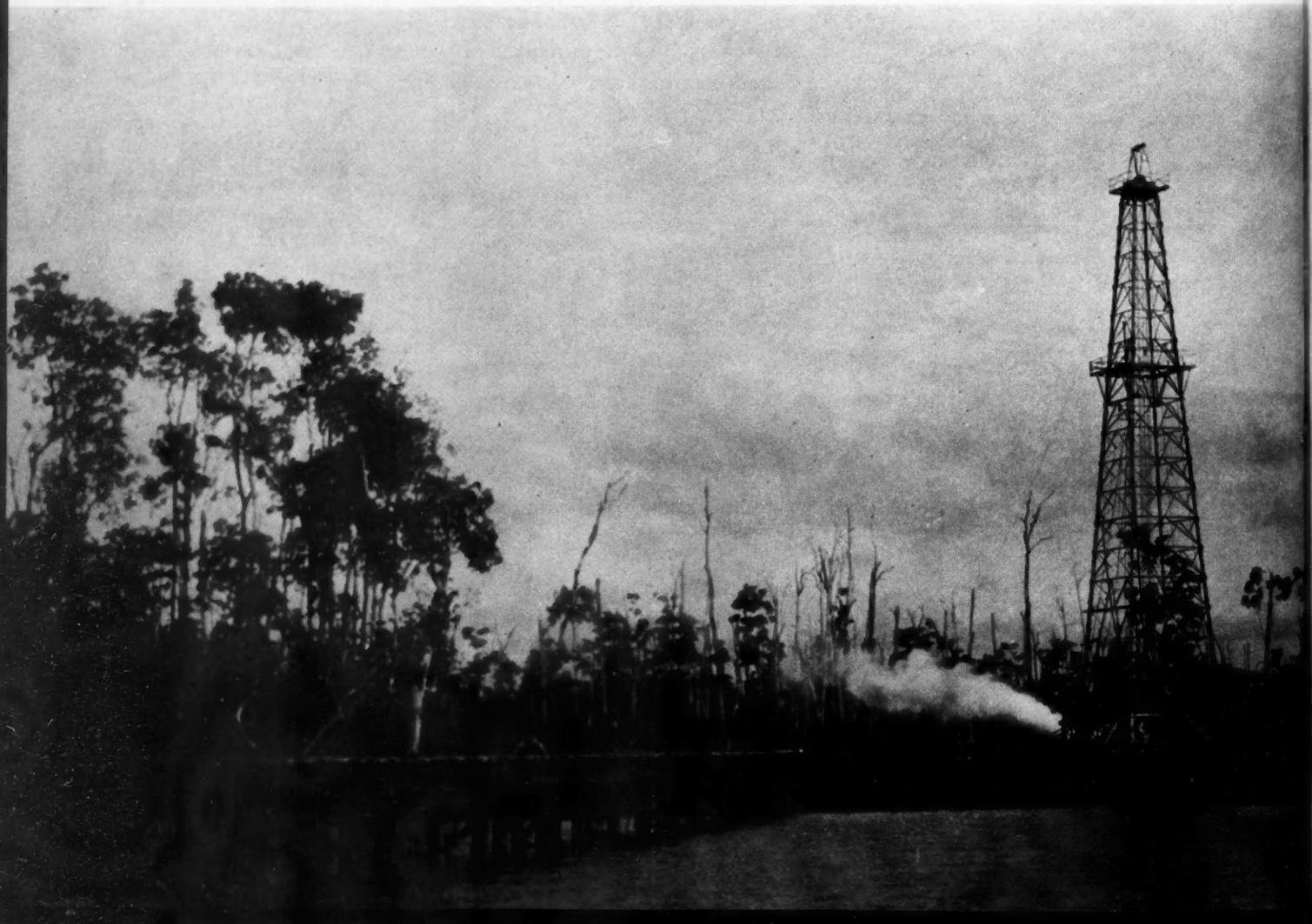
Pressures range from 400 to 650 pounds, roughly speaking. Out of the 110 completions since discovery, 92 have been oil wells, 10 gas wells and 8 failures. The deepest of them was Standard Oil Company of Venezuela's No. 73, which was abandoned in January, 1936, at 7720 feet.

The productive area of the field, as of October 13 was 883 acres, but a stepout test drilling may increase that considerably.

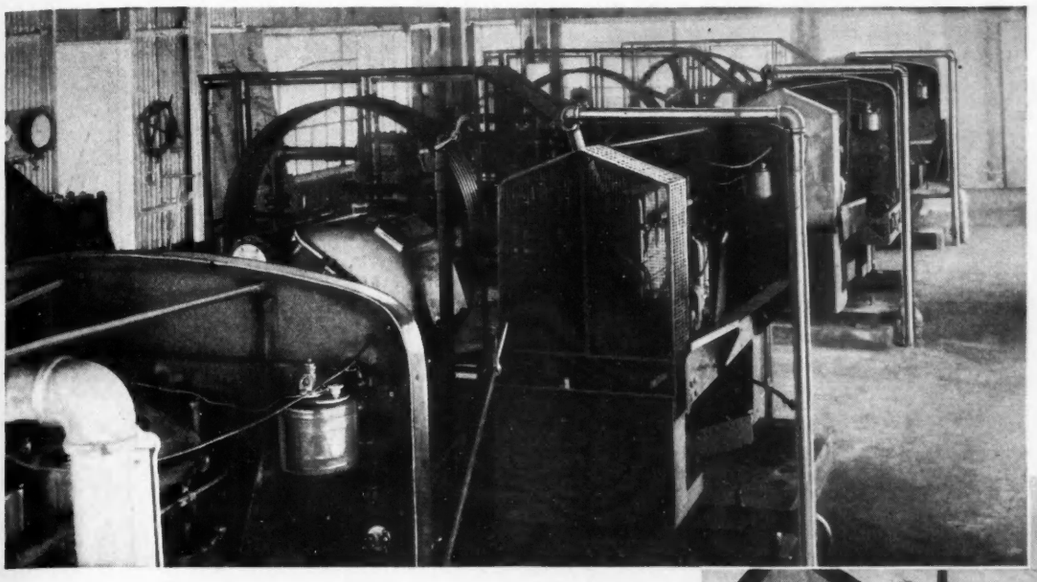
Crude recovered from Cumarebo in 1937 amounted to 2,573,700 barrels. During the first 9 months of this year, production totaled 1,952,590 barrels. The current daily output is 7000 barrels.

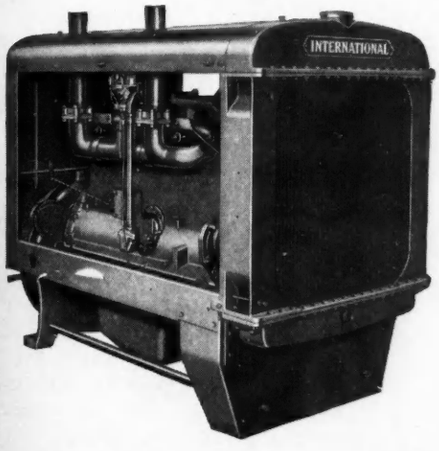
Of the 92 oil wells completed, 58 still are on production, and 44 of these are flowing. Three wells are on lift and 11 are pumping, 4 of the latter by internal combustion powered central powers and six by individual units powered with internal combustion engines. There is one power take-off to balance the figures.

Trestle approach to a rig at Pedernales. Water for the boilers is piped through a 4-inch line from 40 kilometers up the Cano Manamo, because the water at Pedernales is bad. The oil has a high sulphur content.

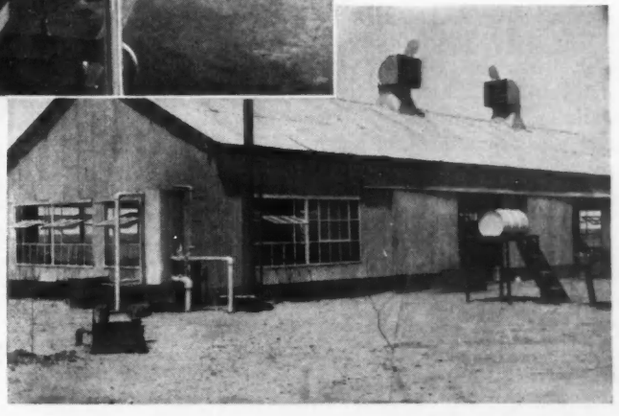


INTERNATIONAL Power Units Provide Unusual Economy in Booster Stations





Above are the four International 6-cylinder PA-100 Power Units that power the booster pumps in the station shown at the right. The Model PA-100 oil-field type power unit with radiator and hood is shown at the left. There are 11 models in the International Power Unit line, ranging up to 110 max. h.p. for gas, gasoline, and Diesel.



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This is the report on the four International 6-cylinder PA-100 Power Units operating booster pumps in the station shown above. These engines, using natural gas, power four pumps 2½ x 5 x 10-inch in size. Total capacity is 22,000 barrels every 24 hours. They are pumping through an 8-inch line for four miles and then through a 10-inch line for over 70 miles. They can be cut in or out as power requirements vary.

At the time these pictures were taken, these International Power Units had operated 8,230 hours, 10,365 hours, 9,545 hours, and 8,360 hours respectively. And the *upkeep cost during that time averaged only $130 per engine*, including new cylinders and pistons. These were recently installed and the Internationals were again ready for thousands of hours of operation.

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INTERNATIONAL Industrial Power

A Rational Proration Plan for East Texas

Consistent with present applicable law, without undue extension of proper police powers, and subject to careful engineering control

By ALEXANDER B. MORRIS, Petroleum Engineer

THIS is not an Utopian dream, but something quite possible of present attainment if the operators throughout the State of Texas can be brought into agreement upon one single point; namely, that it is immediately and ultimately to the financial advantage of each and every one of them, except only those whose only properties lie east of the "golden lane" in the East Texas field, to bring about a realistic solution of the East Texas problem. Great credit is due to the Railroad Commission for the valient work it has done against almost unbelievable odds in accomplishing some degree of control both upon development and upon daily production. Rule 37 still seems to hold great promise as a measure for development control during the early life of any field, but the machinery which it affords for the present situation is altogether inadequate. Probably no one would be more ready to admit this as true than the members of the commission itself.

The plan herein presented is one which recognizes the present known physical facts relative to the field, and at the same time lies within the proper exercise of the police powers of an administrative agency of the state as defined by the legislature and as interpreted by the courts. It is predicated upon the following premises:

1. An oil operator is not entitled so to operate his property as to withdraw from the common source substantially more oil than originally underlay his tract in the reservoir.
2. No owner or operator can be deprived of the right to recover the oil which originally underlay his tract.
3. No owner or operator, in so recovering his share of the common source can levy involuntary contributions from his neighbors from their shares of the common source.
4. The Railroad Commission is an administrative arm of the State to which has been delegated the conservation of natural resources. It must discharge this duty without itself violating these rights, or permitting them to be violated by others in following its orders.

All these premises have adequate legal support[1]. How far present proration in East Texas falls short of meeting these requirements everyone in the least familiar with the field is aware. Small tract drilling is almost the rule, rather than the exception, and for all practical purposes in this field, Rule 37 is a dead letter. The theory of marginal well allowables, applied under these conditions, with at best a relatively small spread between the maximum and the marginal allowable in the field, results in recoveries from single wells on town lots equalling or exceeding those from nearby wells on tracts ten times as large. Many such wells have already recovered several times as much oil as originally underlay the tracts upon which they are drilled, and there is good reason to believe that many, situated toward the center or the east side of the field, still have under them as much oil as was originally in place. This results from the fact that the driving force is applied almost altogether from the west side so that as oil is withdrawn from the whole field, the higher eastern portion remains always full, while water advances upon the field from the west successively drowning out wells on the west edge long before they have had time, under the low marginal allowable, to recover more than a small fraction of the oil which originally underlay them. In a former article[2], the writer pointed out the operation of this principle, and how position of a tract with respect both to the configuration of the reservoir and to the direction from which the expulsive force is applied, might be a controlling factor in the ultimate recovery from the tract. Not only is this element given no place in the production control program, but the measures adopted actually exaggerate the inequities of position rather than mitigate them.

The section of reservoir discussed hereafter, and forming the basis of the accompanying table, is the same section discussed in the article last above mentioned. It is a slice 660 feet wide and three miles long cut out of a sand body simulating East Texas conditions. This sand body is assumed to have a uniform texture throughout, to have a uniform porosity of 20%, a uniform 100% saturation, a uniform permeability in all directions, and an over-all recovery factor of 34.66%. Parts of the accompanying table are taken directly from the tables presented in that article[2].

This 660 feet x 3 mile strip underlies 240 acres, divided into 23 tracts, the one on the extreme west

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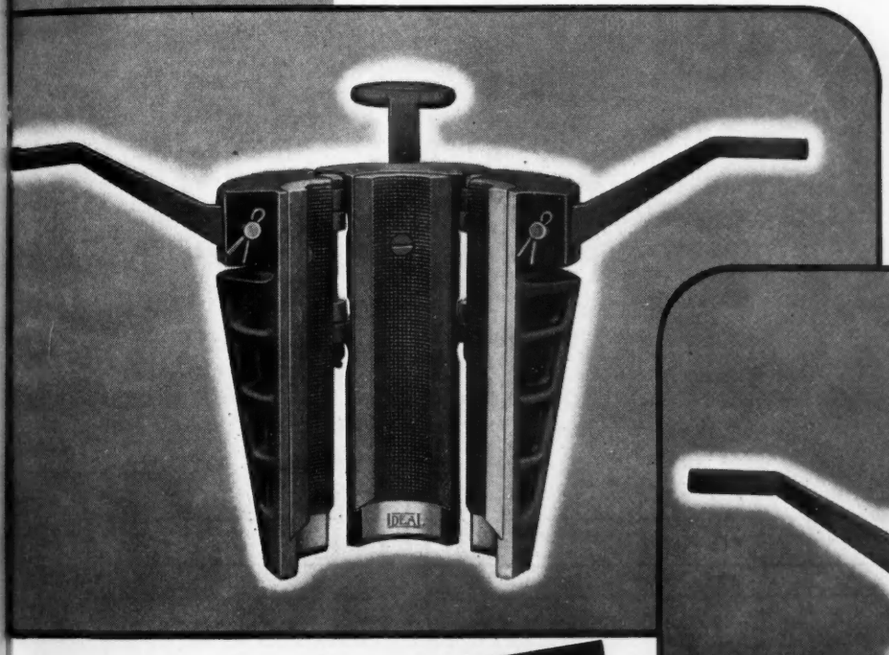

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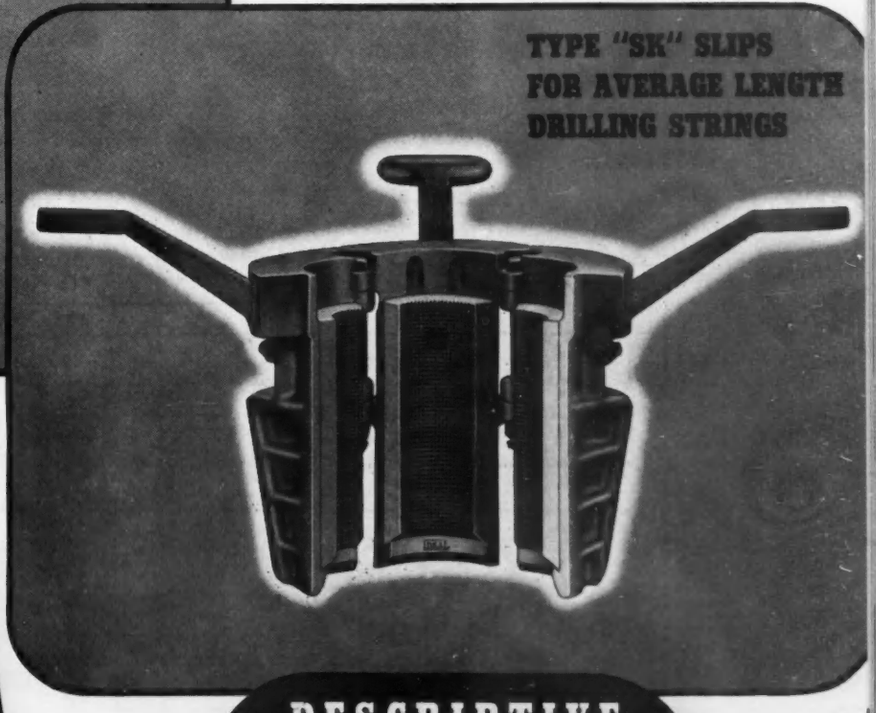

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side, tract A, containing 20 acres, all the others to tract W inclusive containing 10 acres each. In Case 1 it is assumed that one well is drilled on the east 10 acres of tract A, and one well on each of the other tracts, a total of 23 wells; and that each well has an allowable production of 20 barrels per day. This represents conditions toward which East Texas proration is trending. Case 3 assumes that tract M is divided into four ownerships, upon each of which a well is drilled, a total of 26 wells; and also that the allowables increase in the direction of increasing sand thickness, as indicated. This represents conditions prevailing in the field up to within a year or so.

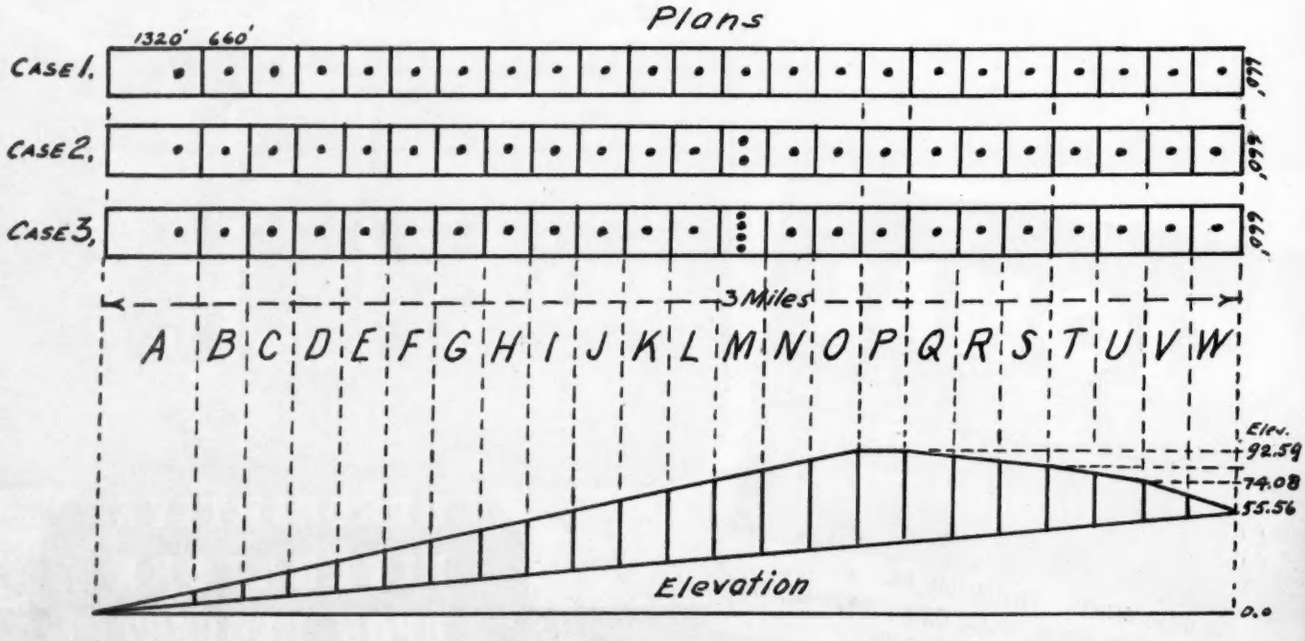
Referring now to the accompanying table, the really signficant column in each division is the one headed "Proportion of Original Content Recovered." As a result of its position over the reservoir, of the configuration of the reservoir, and of the equal marginal allowables accorded to all wells under Case 1, the well on tract A recovers only 6.1% of the recoverable oil originally underlying tract A, while the well on tract W, solely as a result of the same considerations, recovers 477.5% of the oil originally in place under it. Under Case 3 where allowables are unequal and where a center of small-tract drilling exists, as on tract M, tract A recovers only 4.0% of its proper share of the total recoverable oil, while each of the four owners of 2.5 acre lots in tract M recovers 327.4% of his proper share, and the owner of tract W, while somewhat restricted by the over development in tract M, still recovers 365.8% of his proper share of the common source.

If we allow a tolerance of 15% either way in actual recovery as compared to proper share of the total, only 6 tracts, in either Case 1 or Case 3 can be considered to receive equitable treatment; and if a tolerance of 10% is chosen, only 4 tracts in each block of the table are acceptably handled. Every owner in the field west of tract K or L has a just grievance against all other operators east of him, but these grievances are not actionable since it cannot be shown who has been damaged by whom. As a matter of fact these grievances should be laid at the door of the regulatory body for prescribing production limitations which result in these conditions. Under the suggested program, set forth in the right hand block of the table, the recoveries from 17 of these tracts fall within the 15% tolerance, and 16 of these 17 within a tolerance of 10%. The well on tract A now recovers 42.3% of its proper share instead of 6% or 4%, and is a marginal well instead of being an out-and-out failure. Well B becomes a commercial well instead of a failure under either of the other plans. All remaining wells are good investments. No owner in this hypothetical section is permitted, under this plan, to recover more than 9.5% in excess of his proper share.

As the proper share for any tract cannot be positively computed to within 10% of accuracy, this amounts to substantial perfection for at least 16 out of the 23 tracts, and a marked improvement for all the others as opposed to substantial perfection for but 4 out of 23, with gross excesses for some of the others at the expense of severe infringement of property rights for the balance.

If a definite area, say 10 acres, be considered the unit for production control, it is immaterial how many wells happen to be located on it so long as the total production from the area is limited. If this limit is uniform throughout the field, we have substantially the conditions illustrated in Case 1, the simplest set of conditions. Under this arrangement the recovery factors for the several tracts range between 6.1% and 477.5%. In other words, as compared to tract A, tract W is 78.3 times as favorably situated on the reservoir (477.5/6.1). Similarly, as compared to tract B, tract W is 34.1 times as favorably situated (477.5/14.0). In this manner were determined the ratios of tract allowables which would correct for tract position on the reservoir.

If the daily allocation for the field is 390,000 barrels, the rate of withdrawal approximates 3 barrels per acre per day. Assuming this to be the case, the 240 acres in the section under discussion would have a daily allowable of 720 barrels, which would be distributed between the several tracts in accordance with the factors just determined. Under the standard operating conditions assumed for



Idealized section forming the basis for the table. Three plan views, one corresponding to each case, are shown.

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this entire discussion — that total withdrawal was at such a rate as to prevent the formation of a gas cap, and that the water-oil interface was always horizontal — these allowables would prevent any owner from securing vastly disproportionate ultimate recoveries and would benefit all owners who still might not be receiving their calculable share of the total supply.

If 10 wells with 10 separate owners should lie within tract S, for example, all 10 wells together would only have an allowable of 9.9 barrels per day. The 10 owners would thus be forced, for their own protection, into a cooperative agreement of some sort whereby they rotated the operation of the wells between them; or unitized the 10 tracts, plugging say 8 of the wells and salvaging the equipment. It is of no possible concern to the Railroad Commission what private arrangements operators find necessary to adopt in obeying proper police regulations. The man hailed into court for maintaining a nuisance in his yard may be greatly inconvenienced, or even financially penalized, by having to abate it, but neither the police nor the courts are very considerate of his convenience or of the expense to which he will be put, if he fails to do so. If in the exercise of its police powers in safeguarding the natural resource, rigid production control becomes necessary—a point about there is no room for question—persons coming within the jurisdiction of the Commission must obey its orders unless these can be shown to be in violation of private property or clearly ultra vires. The four owners in tract M in Case 3 in the table certainly consitute a demonstrable nuisance to all owners west of tract M. The Commission order prescribing the well allowables as per either Case 1 or Case 3 itself constitutes a demonstrable nuisance to all owners west of tract R, in that it not only permits all other owners to take their property without compensation, but actually makes it well nigh impossible for them to avoid doing so.

The actual determination of tract allowables under this suggested plan is by no means a simple matter, but the task would be a small one in comparison to the widespread advantages to be derived, not only in East Texas, but in every other field. We have assumed in the illustration herein an ideal and uniform reservoir. Such does not exist in nature. It is possible, however, to introduce into the calculations any desired degree of technical control. The facts available with respect to the East Texas reservoir and the optimum operating conditions there are so extensive that a very high degree of control can be exercised. Sand thickness, thickness of the saturated section, degree of saturation, porosity, permeability, connate water content, the amount of gas in solution, and present and past formation pressures are all known for practically the entire area. Some or all these items enter into the estimation of the original oil content under any particular tract, and also into the estimate of the amount of this oil which will be recoverable under field operating conditions. If a 10-acre grid were laid out on a map of the field, each east-west row of 10-acre grid-squares could be estimated in the same manner as was done in the construction of the tables from the ideal section assumed herein. The reservoir configuration could be determined for each strip by profiles of the top and bottom of the Woodbine sand made along the east-west grid lines. Appropriate notations indicating zones or lenses of unsaturated section, made on these profiles would serve to modify the estimates for individual squares. Depending upon porosity, permeability and degree of cementation, the maximum rate of withdrawal per acre consonant with the rate of advance of the natural flood will vary. In areas of particularly loose sand, a rate of withdrawal less than the computed allowable may have to be maintained in order to prevent the formation of a gas cap. In tight areas a somewhat greater rate of recovery might have to be allowed, in order that equitable ultimate recoveries might result. Too rapid withdrawal in some cases might result in disturbing the balance between connate water and oil in transit to the well. Thus in respect to tract A under the proposed set-up, it might be inadvisable to permit this well to produce at the rate of 216 barrels per day because of a possible excessive tendency

Comparison of Results by Present Program with Those Obtainable Under Rational Plan

10-Acre Tract	Original Recoverable Oil Content	APPROXIMATE PRESENT PRACTICE — Case 1. Equal Well Allowables: No. of Wells	Daily Well Allowable	Recovery from Tract	Proportion of Original Content Recovered	Case 3. Unequal Well Allowables: No. of Wells	Daily Well Allowable	Recovery from Tract	Proportion of Original Content Recovered	SUGGESTED PRORATION PROGRAM — Unequal Tract Allowables: No. of Wells	Daily Tract Allowables: Ratio	Barrels§	Recovery from Tract	Proportion of Original Content Recovered
A (20a)	37,500	1	20	2,293†	0.061	1	20	1,505†	0.040		78.3	216.2	15,848‡	0.423
B	46,875	1	20	6,554†	.140	1	20	4,258†	.091		34.1	94.3	24,446	.523
C	65,625	1	20	13,251‡	.202	1	20	8,513†	.130		23.6	65.3	39,327	.598
D	84,375	1	20	22,626	.268	1	21	15,081‡	.179		17.8	49.2	56,469	.667
E	103,125	1	20	34,962	.339	1	22	24,116	.233	N	14.1	39.0	75,703	.733
F	121,875	1	20	50,588	.415	1	23	36,030	.295	O	11.5	31.8	96,673	.794
G	140,625	1	20	69,889	.497	1	24	51,292	.364	T	9.6	26.6	119,542	.852*
H	159,375	1	20	93,327	.586	1	25	70,444	.441		8.1	22.5	143,346	**.900***
I	178,125	1	20	121,452	.682	1	26	94,116	.527		7.0	19.3	170,460	**.957***
J	196,875	1	20	152,333	.774	1	27	121,033	.614	M	6.2	17.1	198,242	**1.008***
K	215,625	1	20	183,906	.853*	1	28	149,248	.694	A	5.6	15.5	222,180	**1.030***
L	234,375	1	20	215,168	**.918***	1	29	178,040	.760	T	5.2	14.4	246,439	**1.051***
M	253,125	1	20	246,489	**.974***	4	30	828,882	3.274	E	4.9	13.5	269,997	**1.066***
N	271,875	1	20	277,700	**1.021***	1	30	237,567	.876*	R	4.7	13.0	294,594	**1.082***
O	290,625	1	20	308,894	**1.063***	1	31	276,187	**.950***	I	4.5	12.4	315.422	**1.085***
P	293,750	1	20	328,085	1.117*	1	32	304,282	**1.036***	A	4.3	11.9	320,880	**1.095***
Q	272,917	1	20	316,558	1.160	1	32	292,760	**1.074***	L	4.1	11.3	294,867	**1.081***
R	243,750	1	20	299,929	1.230	1	31	267,411	**1.097***		4.9	10.8	265,234	**1.089***
S	214,583	1	20	282,984	1.319	1	30	242,647	1.130*		3.6	9.9	230,308	**1.072***
T	181,250	1	20	262,254	1.447	1	29	215,199	1.186		3.3	9.1	194,658	**1.072***
U	143,750	1	20	237,158	1.650	1	28	187,167	1.302		2.9	8.0	153,292	**1.065***
V	93,750	1	20	199,396	2.127	1	27	154,898	1.652		2.2	6.1	95,882	**1.023***
W	31,250	1	20	149,204	4.775	1	26	114,319	3.658		1.0	2.8	31,241	**1.000***
Totals	3,875,000	23	460	3,875,000	....	26	....	3,875,000	....		260.5	720.0§	3,875,000	....

Full Face indicates recovery within 10 percent of original content. * Indicates recovery within 15 percent of original content. † Indicates well a failure.
‡ Indicates well a marginal well. § Equivalent to total withdrawal of 3 barrel/acre/day.

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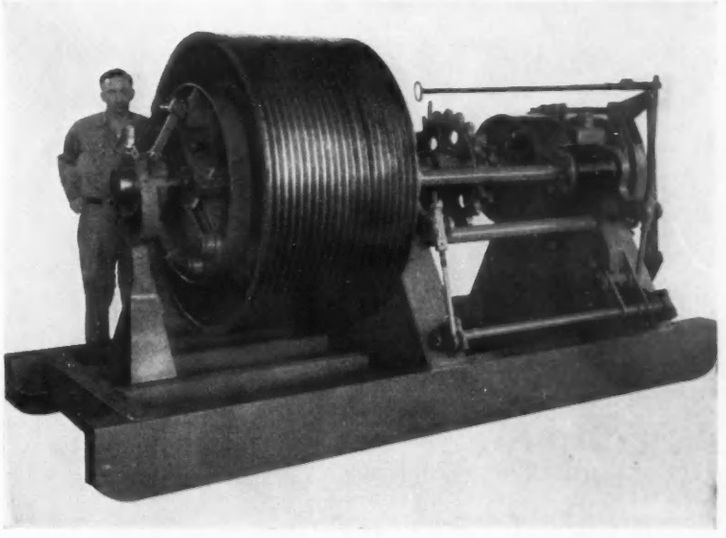

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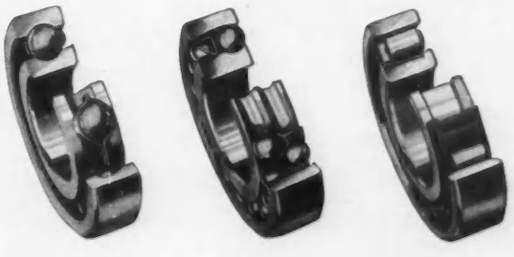

toward coning. The operator himself might not wish to produce this one well at the maximum allowable rate for his tract. The solution for such a condition might be the drilling of one or more additional wells so that the tract allowable could be divided among them, thus possibly removing the damaging effect of too rapid withdrawal through only one opening. Whether or not such a solution would be financially justifiable would be a question to be determined by the operator himself. He could drill more wells and so recover his full allowable without damage to the sand under his lease, or he could limit his take through his one well to an amount where no sand damage resulted. In any event, he should be given the privilege of giving away his own oil to his neighbors farther upstructure, and not have it taken away from him through the inadvertant operation of executive orders, as at present.

For administrative purposes, the determinations of allowables made from the 10-acre grid, as above outlined, would have to be translated into terms of land title boundaries. It would then be possible to assign to each operating unit a daily allowable built up from the allowables of the grid-squares within which it lies. Suppose that a 30-acre lease lies in four grid-squares for which the computed allowables were, respectively, 12.3, 13.2, 13.8, and 14.1 barrels per day. Measure by planimeter the portion of the 30-acre lease lying in each grid-square. The following relations are found, from which the corresponding allowable for the lease is computed:

Acres of lease in each square	Allowable per acre	Total Allowable
8.2	1.23	10.09
7.9	1.32	10.43
9.5	1.38	13.11
4.4	1.41	6.20
30.0		39.83

If this lease had four wells on it, they could be rotated so as each to produce the total allowable every fourth day, or the operator might elect to plug one or more of them, salvaging the equipment and reducing operating costs. He could then safely follow this practice, since the orders under which he would be operating would be issued in cognizance of physical realities, and he would no longer be at the mercy of his neighbor for his full just ultimate recovery.

Once worked out for the field, the maintenance of such a set of data in usable form would not be especially costly or burdensome. It would seldom be necessary to alter the "Ratio of tract Allowables" for any strip of grid-squares. The daily allocation for the field as a whole, as established for each month, divided by the number of producing acres, would give for each month the allowable withdrawal per acre, from which the allowable withdrawal for each strip would be obtained. Except where changes had been made within a strip, the lease allowables originally determined could be adjusted from month to month directly in proportion to the field allocation. This would entail no more work than the present method of adjustment.

If the state cannot find funds to have such a study of the field prepared, it should be sufficiently to the interest of the operators, particularly those whose properties lie west of the axis of the field, to contribute to a fund for the purpose, and submit the results to the Commission for hearing and approval. The major companies should have but little interest in opposing such a plan, since their leases are well distributed throughout the field, so that about as many would be helped, in current recovery rate, as would be harmed, and the ultimate from the entire field might well be increased. The biggest howl would come from small operators and royalty owners lying east of the field axis, whose present unjustly excessive recoveries would be severely curtailed. To these would be added the voices of the operators of small-tract wells. The merit of their complaint has already been discussed. They have a simple and obvious remedy in unitization. Certainly the major operators could afford to lend the weight of their influence and contribute toward the execution of any plan that would assist in abating the small tract nuisance. Against these dissenters would be solidly lined up all west side royalty owners and operators, with such of the majors as considered the elimination of the small tract well fair compensation for the possible restriction of their total current allowable from all their properties in the field. Considering the fact that most of the majors have bought into the field on a long range program of supplying their large refineries with crude, and not for the speculative turn-over possibilities, an increase in ultimate recovery is of greater concern to them, than any possible effect which such a program might have on the statistical "present worth" of their properties. Consulting the table again, look at Case 3 and at the suggested plan, and imagine that tracts H and S were both owned by the same operator. Under Case 3, his present allowable from both tracts would be 55 barrels per day, and the total ultimate recovery 313,091 barrels. Under the suggested plan, the present daily allowable would be 31.6 barrels, but the ultimate from both tracts would be 373,654 barrels, an increase of 19%. This should prove of greater importance to such large operators than a reduction in present worth—due to additional time deferment — of about 25%. This estimate makes no provision for probable reduction in operating costs over the remaining life of the field, made possible by the early abandonment of a large number of wells. This consideration alone could readily more than make up for the additional deferment, leaving the net gain in ultimate recovery an actual gain at the present time.

The application of such a plan to the East Texas field should also attract the active support of every operator, large and small, in other fields in the state, the daily allowables for which have to be fitted with that for East Texas, into a more or less inelastic total allowable for the state, and hence are subject to diminution in direct proportion to the increase in development in the already over-developed East Texas field. The idea of tract allowables is neither new nor original with the writer. The foregoing development of a proration plan based upon tract allowables however presents a method of correlating the legal exigencies of the problem with all of those technical aspects which properly bear upon it. It therefore has a better chance of being successfully defended against attack than other tract allowable plans, the results of which either fail to consider all the necessities of property rights or omit some engineering features which render the plan unsatisfactory from the standpoint of operation.

References

[1] A. W. Walker, Jr., "The Problem of the Small Tract Under Spacing Regulations." THE OIL WEEKLY, August 1, 1938, page 22.

[2] A. B. Morris, "Present Proration and Well Spacing Programs Distort Equitable Recoveries." THE OIL WEEKLY, September 12, 1938, page 27.

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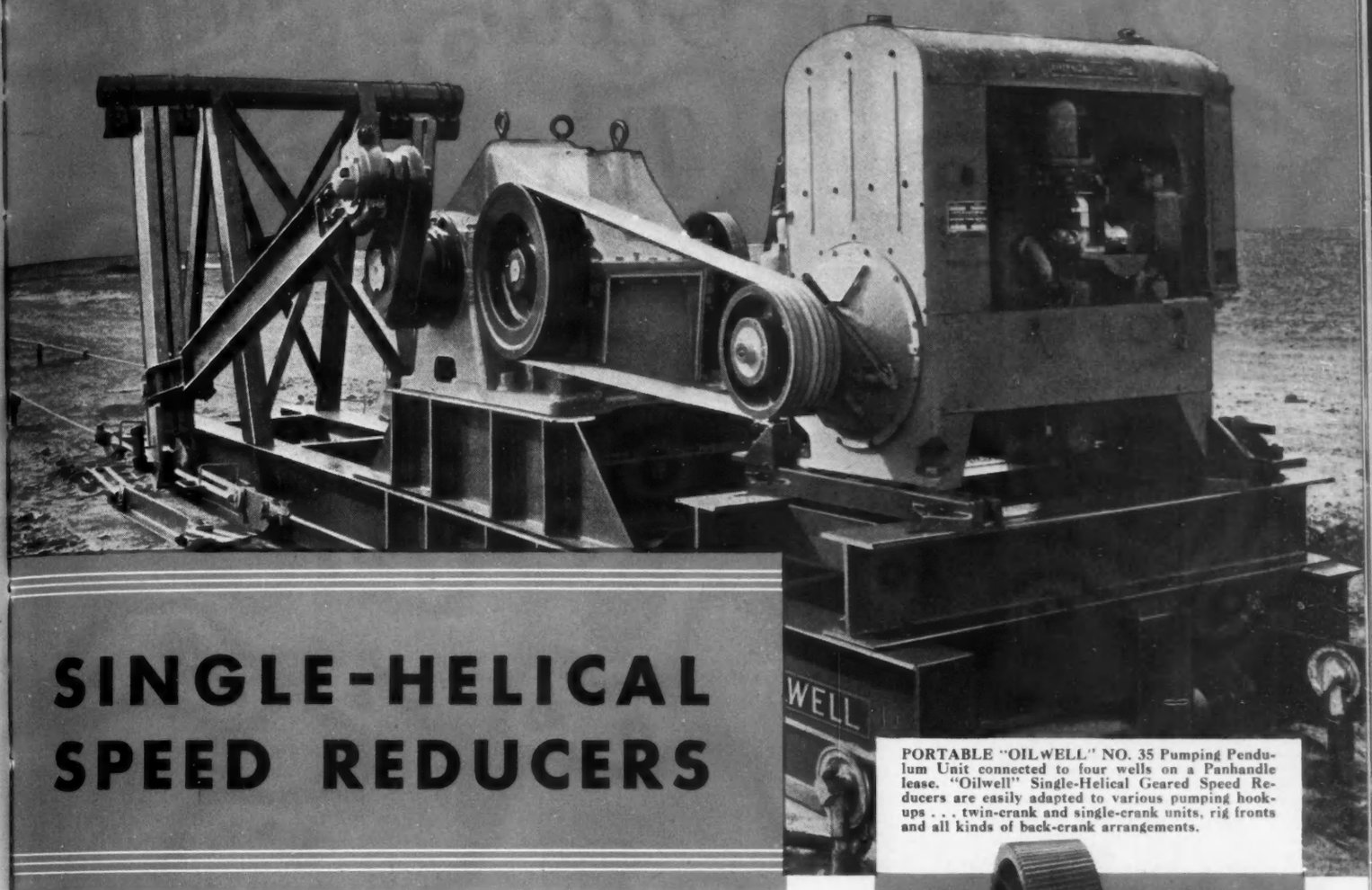

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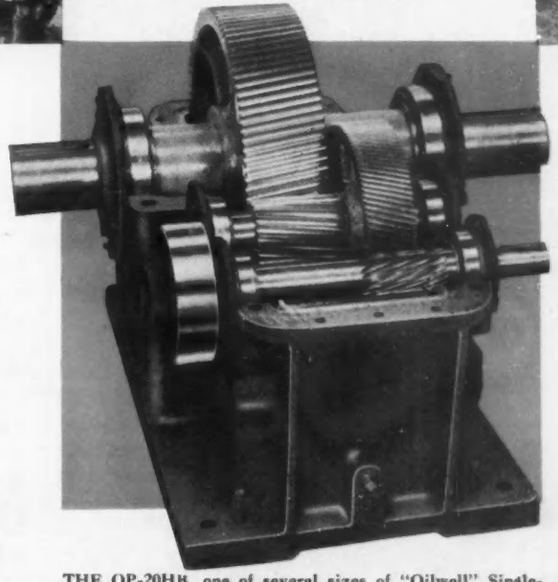
Tapered Roller Bearings on Heat-Treated Shafts maintain precision alignment and accurate spacing of gears.

Positive Lubrication . . . provision made for ample lubrication at slow speeds and when starting . . . single-helical gears operate equally well in either direction.

Symmetrical Case . . . right or left-hand drive . . . shafts can be turned end-for-end to reverse meshing and loading of teeth, *thus doubling gear life.*

The nearest "Oilwell" representative will gladly explain these and many additional advantages.



THE OP-20HB, one of several sizes of "Oilwell" Single-Helical Geared Speed Reducers. Compact construction results from the use of tapered roller bearings on all shafts. The symmetrical design permits the shafts to be turned end-for-end, thus reversing the mesh of the teeth for double gear life.

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Oil Is of Great Benefit To Texas

By C. P. McGAHA, President

TODAY Texas is enjoying a marked degree of prosperity, that is, by comparison with other states. Texas is one of the few states where economic conditions are most favorable to the well-being of its citizens. The people of Texas have money and they are busy building a new industrial empire.

This condition did not occur over night. It is the result of gradually improving business conditions over a period of many years and particularly the last seven years, at a time when other sections of the nation have been beset by the rigors of depression and the subsequent relapse, the recession. The other day I saw a squib in the Louis Allis Messenger which defined these terms: "When you tighten up your belt, it is a recession. When you have no belt to tighten up, it is a depression. When you have no pants to hold up, its a panic."

Oil Brings Prosperity

The past seven years, between 1930 and 1937, marked a new cycle which has wrought the greatest and most important change in the economic life of Texas. During this seven year period oil development and exploitation has spread to every section of the state, creating employment and offsetting reduced incomes from crops and live stock with cash distributed by the oil industry in the form of wages, lease rentals, lease bonuses and oil and gas royalty payments.

Although oil has been produced commercially in Texas over a period of nearly 50 years, a fact of real significance to everyone living in this state is that over one-half of the 5 billion barrels produced thus far has been produced within the past seven years. The extent to which oil development within the past seven years has influenced the welfare of Texas and its people is

An address before the Texas Mid-Continent Oil & Gas Association, San Antonio Convention, October 27, 1938.

strikingly evidenced by a definite correlation between all basic statistics of the state with the upward trend of oil production during this period. Comparative statistics for this seven year period show more employment, more automobiles, more bank deposits, more building, more telephones, more utility consumers, increased income tax returns, big increases in population of counties and cities, more export tonnage moving through Texas ports, more miles of improved highways, more gasoline tax collections and more taxes levied and collected by the state and its local subdivisions of government.

Many people in our state may be surprised to learn that during the past seven years Texas oil producers alone have spent in the state a total of nearly 4 billion dollars. Last year all branches of the Texas petroleum industry spent 755 million dollars in producing oil and gas and manufacturing these resources into consumable products. Nearly one-half of all this money was spent for taxes, wages and salaries, and lease and royalty payments. It does not take any stretch of the imagination to realize that expenditures of such proportions directly affect the well-being of every citizen in Texas, whether he is in the oil business or not.

Texas is fortunate in possessing the greatest under-ground reserves of oil in the world. However, until the commercial possibility of these resources attracted the capital necessary to develop and produce them, they were of no benefit to the state and its people. The oil has always been here, but it took vision, courage and the expenditure of billions of dollars invested by men and women all over the country to bring this great state's industry to its present position. Senator Morris Sheppard in a brief which he filed before the Committee for Reciprocity Information on trade treaties had this to say about our industry: "The petroleum industry is the most important one in my own State of Texas. The value of oil produced in that state exceeds the value of all the crops produced in Texas. It is the most important single item in our economic life."

Encouragement of new capital and the incentive to reinvest returns from invested capital are prime requisites to success of any state program of industrialization. What has been accomplished within the past seven years by the Texas petroleum industry furnishes a conspicuous example of what may be accomplished by an unoppressive and wisely administered state government. Yet as you all know, our industry has been made the target of repeated attempts to tax it out of existence, and had some of the proposals to impose confiscatory taxes on oil and gas been adopted by our state legislature, Texas could not have attained its present favorable economic position; for without the remarkable expansion that has taken place over the past seven years, as a result of the state-wide distribution of billions of oil dollars, Texas would not now be one of the white spots on the nation's business map.

Benefits Reach Every Section

Official facts show that more money is being put into the Texas petroleum industry than is actually taken out. This is largely due to the fact that the industry is constantly expanding into every section of the state, reinvesting returns from operations and bringing into the state new capital in

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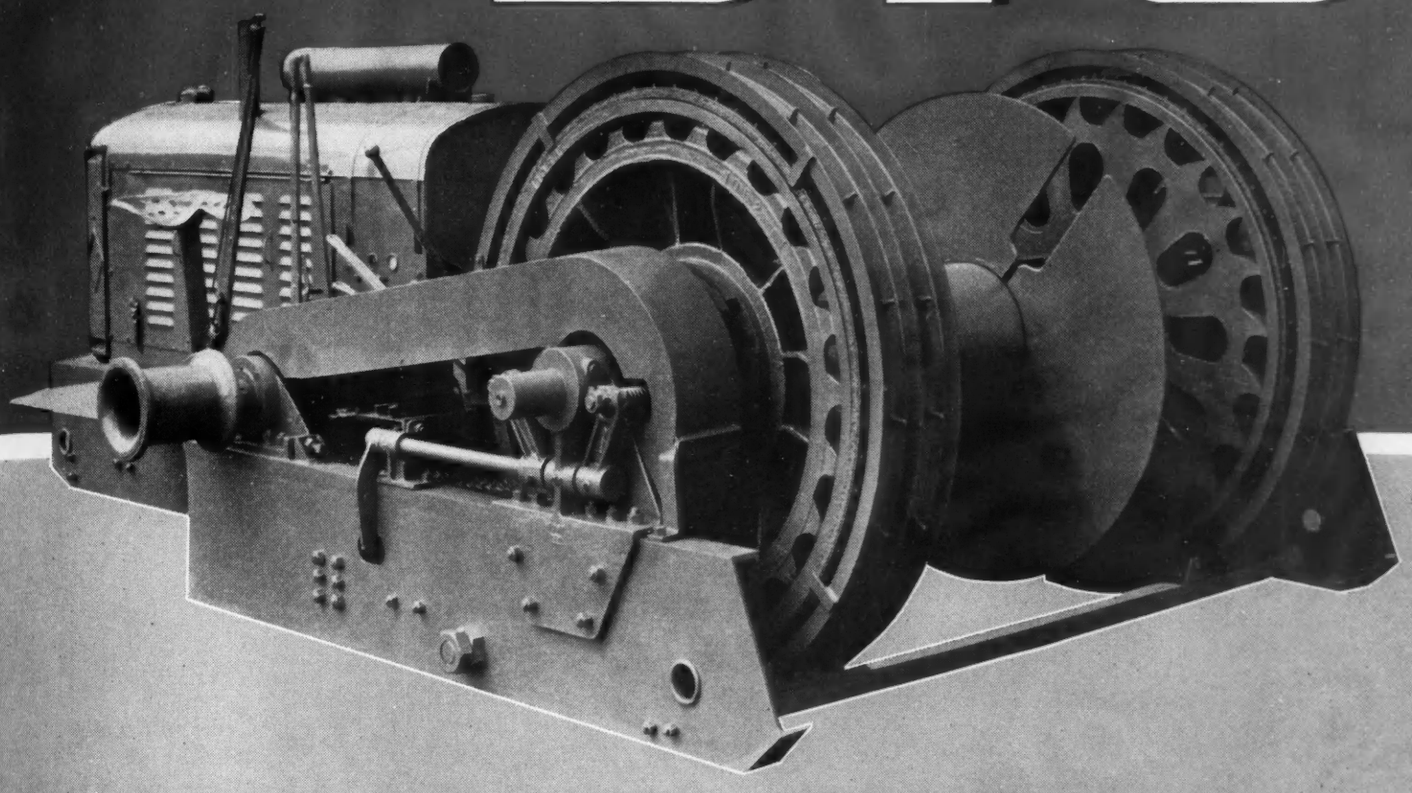

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2. Line capacities—39,000′ of ½″. 32,200′ of 9/16″. 18,450′ of ¾″. 9,830′ of 1″.	2. 4 speeds forward, one reverse.	2. Removable cylinder sleeves. Inserted exhaust valve seats. Crankshaft, four main bearings.
3. Brakes—Two 52″diameter drums 10″ face. Patented design cast steel drums force air circulation for rapid cooling. 2,960 sq. in. brake service area.	3. Heavy duty ball bearings throughout except cross shaft in rear of transmission which is mounted on heavy duty taper roller bearings.	3. Governor, positive action, built in. Dual carburetors. Fuel pump. 50 gal. fuel tank.
4. 5¼″ diameter drum shaft. Rigidly held against lateral movement and rotation. Free rolling drum mounted on heavy duty ball bearings.	4. Transmission case mounted as integral unit with power plant insuring perfect alignment of shafts, bearings, and gears.	4. Full pressure lubrication from gear driven pump to all working parts.
5. All controls arranged for convenience. All unit parts removable without dismantling any other part of winch.	5. All gears and bearings run in oil bath.	5. Water capacity 19 gals. Water enters engine through cylinder head and completely surrounds each combustion chamber and exhaust valve. Forced circulation by large impeller pump cools hottest points first.

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order to fully develop the productive possibilities of our state. The value of petroleum and its products in Texas last year amounted to about 750 million dollars, but as I have already pointed out, the industry spent at least 755 million dollars last year in Texas, most all of which money stayed in the state.

The extent to which this expenditure benefited the people of Texas is shown by the fact that 360 million dollars was paid out last year by this one industry in wages and salaries, and lease and royalty payments to farmers and landowners. Materials and supplies purchased last year aggregated 190 million dollars. Taxes reached the staggering total of 103 million dollars, exclusive of the gasoline tax which is paid by motorists; and all other expenses amounted to 102 million dollars.

The benefits of oil development to every section of the state may readily be appreciated in the light of their effect upon taxable values in many of the newer oil producing counties. In 19 counties where new development has occurred within the last ten years, taxable values have shown a total increase of nearly 419 million dollars.

The search for oil necessary to the perpetuation of Texas' predominating position as the nation's principal source of oil supply, has spread over 240 out of the state's 254 counties. Today oil is being produced in 130 counties of the state, while active exploitation work is being carried on in 110 additional counties. Forty-five million acres of land are now under lease for oil and gas development. Last year payments to Texas farmers and landowners for lease rentals, lease bonuses and royalties aggregated 105 million dollars.

The state-wide development of Texas' oil industry has not only been a tremendous economic factor in the past, but it has provided Texas with a future. Today, as a result of this vast development, Texas holds the key to the world's greatest storehouse of oil with proven under-ground reserves aggregating well above 7 million barrels, or more than one-half of all the reserves in the United States. The ultimate producing and refining of this oil will mean continued expansion of the Texas petroleum industry, and we may safely anticipate greater expenditures and greater activity in the future.

Obviously the state and all its tax levying subdivisions, as well as the citizenship of Texas, will benefit to an increasing degree if the industry's progress is not handicapped by unwise legislation and confiscatory taxation which would destroy the industry's incentive for continued development of Texas' greatest natural resource.

Important to the state and its people is the fact that a major portion of the output of our oil and gas is processed in Texas for consumption in other parts of the world. Thousands of Texas wage earners depend for their livelihood upon the extensive processing and refining operations which are carried on every day in every section of the state. Recent figures of the United States Bureau of Mines show that 84% of all the crude oil produced in Texas is processed in Texas. During the past seven years numerous new oil refineries have been built in Texas to refine Texas oil that was formerly shipped out to other states for refining. Natural gasoline plants and carbon black plants process much of the gas that is produced in Texas and these plants also furnish employment to thousands of Texas wage earners.

The maintenance of higher-than-average wage scales in the Texas petroleum industry is indicative of the desire of its operating managements to promote a high standard of living among its employees. The fact that oil and gas workers are contented is evidenced by the infrequency of labor disputes which continually occur in other industrial fields. Weekly payroll statistics compiled by the Bureau of Business Research, University of Texas, showed that wages paid by the oil industry hold top rank among all industries in the state. The average weekly wage of those employed in producing and refining divisions in May 1938 amounted to $35.11 against $25.58 per week paid wage earners in 2521 Texas establishments in other lines of business.

Oil Costs High

So much for the part that oil plays in Texas prosperity—Now let us consider some of the problems under which the industry operates.

Dry holes necessarily result in the attempt to discover new reserves. The dry hole bill in Texas up to date has amounted to one billion dollars. Last year's cost was 85 million dollars. The industry has drilled 112,212 oil wells in Texas since 1889, but the Railroad Commission's figures on January 1, 1938, showed that there were 77,565 producing oil wells in the state. The difference represents the number of wells which have been depleted and abandoned. Matters such as these are seldom, if ever, considered by those who propose higher taxes on oil.

Despite the tremendous volume of oil production, Texas oil wells, due to proration, averaged only 16.9 barrels per day, according to the August report of the Texas Railroad Commission. The per well allowable trend is definitely downward, and this will mean constantly diminishing returns to the producers. The hardships of such restrictions are apparent to all. Such a program, however, is essential to our conservation program, in keeping production down to consumer demand. There is no reason to produce tomorrow's oil today. Pumping wells, outside of the East Texas field, averaged only 6 barrels daily per well, and 40% of the latter group showed an average of 3.4 barrels per day. Sixty per cent of all producing oil wells in Texas are in the pumping or stripper class. If we exclude the East Texas field, it is seen that 76% of the wells in all sections of the state are on the pump. Stripper wells are the backbone of the Texas oil industry since hundreds of communities in every section of the state depend upon their continued operation for a livelihood.

The glamour of big oil strikes, wide open flow get-rich-quick-in-the-oil-business, are things of the past. These have been replaced by orderly business-like development and proration of oil pools, and instead of rapidly drilling up newly discovered fields and permitting each well to produce all the oil possible in the shortest space of time, today's oil fields are operated along sound lines of conservation. This greatly lengthens the productive life of oil wells, increases the ultimate recovery per well, furnishes gainful employment over a longer period of years and maintains taxable values so that greater tax revenues accrue to local subdivisions of the government. In the early days of unrestricted wide open flow, oil fields were allowed to deplete themselves in a very short time and these taxable values were soon destroyed.

Every public school district in Texas and all the million and a half school children in the state benefit directly from taxes paid by the oil industry. Last year the oil industry contributed in taxes to all Texas public schools the sum of $17,630,-

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888.00, equivalent to $11.27 for every child attending the free schools in the state. In many independent school districts the oil industry contributed from 40% to 91% of all school tax levies.

The oil industry creates a tremendous turn-over of capital, running into the millions of dollars each year. This generates prosperity, although the oil business itself may not be prosperous. For example, we are frequently compelled to produce and sell oil below the cost of production. Since the recent price cut much stripper well production is now being sold below cost and any additional price cut would mean that still more wells would come into this catagory. Regardless of price, however, the oil man always carries on. He is an eternal optimist. He thinks the price of oil will be up next month or next year. He sincerely believes that there is a pot of gold at the end of the rainbow and he is ever diligent in his search for that rainbow's end.

Few people outside of our industry ever stop to realize that the major portion of the millions spent in oil represents borrowed capital. A survey just made by our Association reveals some outsanding facts concerning the extent to which borrowed capital enters the Texas oil development picture. A canvass of the banks in the larger cities of Texas reveals that loans to oil operators now held by these institutions aggregate $51,175,000. On top of that, the equipment and supply companies have extended credit to Texas oil operators to the extent of $25,000,000. Loan figures furnished by banking institutions outside of Texas, representing money advanced on Texas oil properties, total $77,200,000. This makes the huge sum of $153,375,000 of borrowed capital and credit employed by independent oil operators of Texas. In addition to this, the proportion of long-term funded indebtedness chargeable directly to the Texas petroleum industry as a whole now amounts to about $493,000,000. This makes a grand total of $646,375,000 of borrowed capital now standing against all branches of the Texas petroleum industry. Interest charges on bank loans and bond issues amount to at least $30,000,000 a year. From this it can readily be seen that our properties are developed principally with borrowed money which is made available to the industry on the basis of recoverable oil and our ability to pay out the investment over a reasonable period of time. One of the main considerations, next to the amount of recoverable oil, is the cost of producing the oil and naturally the banker looks at taxes as an important item and when he sees our industry constantly threatened with increased taxes along with restricted production and rising costs of labor and supplies, he sometimes begins to have doubts of our ability to pay. In fact, a common question the banker frequently asks an oil man seeking a loan in Texas today is, "Do you think the next legislature will put more taxes on oil"?

Oil Taxes Rising

In considering tax trends, it is interesting to note that tax values outside of the oil industry have been decreased, while oil tax values have been increased. Analysis of county tax rolls shows that reduced taxable values on properties other than oil were placed into effect in 1931 and 1932 and these values have not been restored to pre-depression levels. As a result, the oil properties have gradually had to absorb an increasing proportion of the local tax burden in many counties of the state. Our Association's tax studies revealed that ad valorem taxes levied on oil properties in 1937 had increased nearly 3 million dollars over 1936, while taxes levied on all other properties decreased nearly one million dollars. All county tax values show a combined increase last year of 154 million dollars, all of which was credited to the state's oil industry.

One of the principal increased operating costs to the industry is occasioned by the obsolescence of refining equipment brought about by continued advancement of chemical science and frequent required changes in specifications of petroleum products. Millions of dollars are spent by the Texas oil industry each year in revamping and modernizing its refining facilities. As a result of this fact the public is assured of an uninterrupted supply of high grade motor fuel and other refined products for which it pays less today than ever before, that is, except for state and federal taxes.

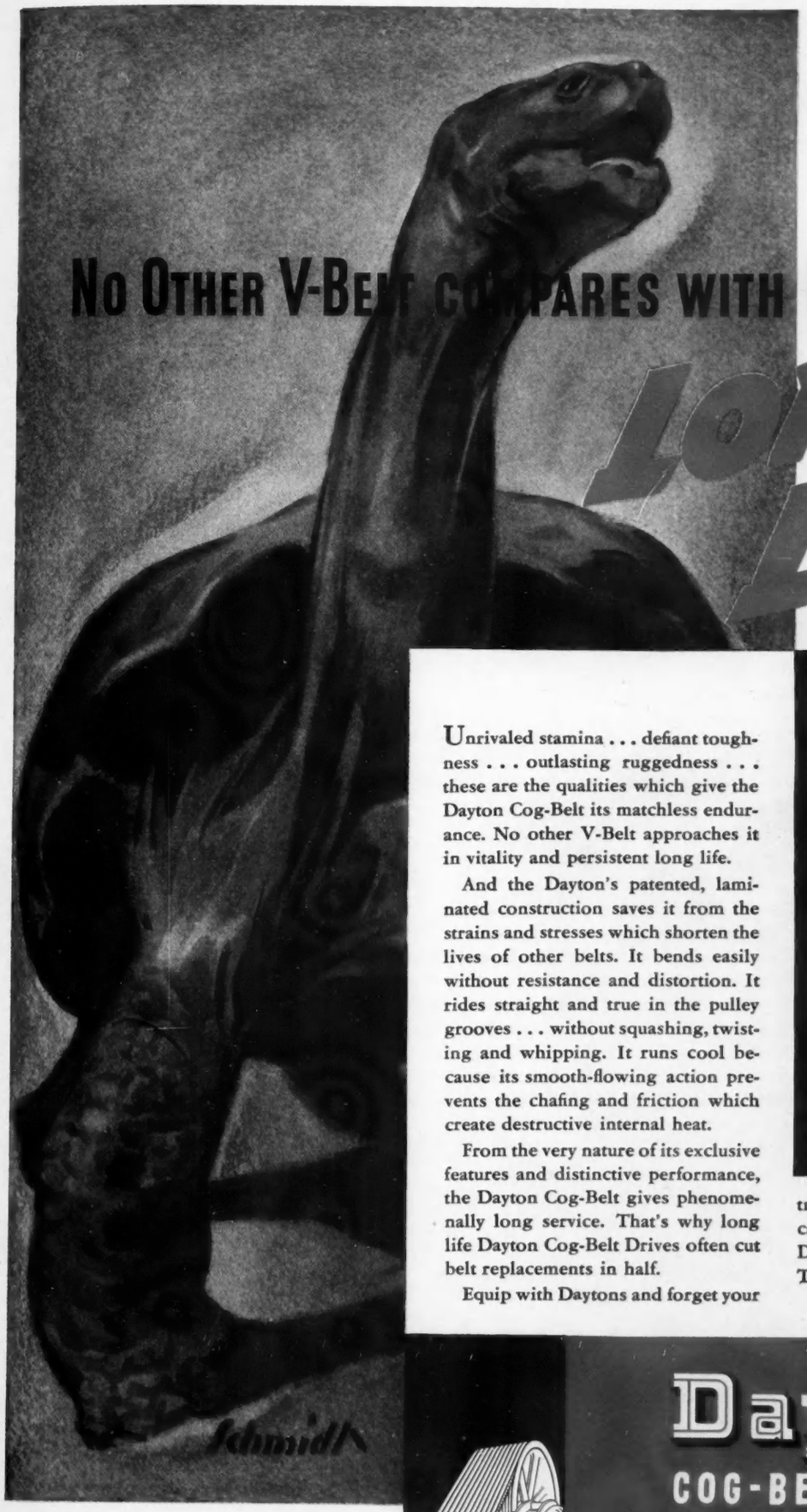
In the same manner, scientific advancement in drilling and producing equipment means that much of yesterday's equipment is obsolete today. Between 1926 and 1931 the average depth of Texas oil wells was 2500 feet—today the average depth is 4000 feet. The maximum depth from which oil is produced in our state is 10,600 feet, which means that it costs nearly twice as much to drill a well today as it did ten years ago. Likewise, the search for new oil fields today is a complicated scientific process and is carried on by more expensive methods, such as geophysical prospecting, etc. Last year the Texas industry spent more than 10 million dollars in carrying on this sort of work.

Excessive Taxes Dangerous

Although Texas produces more oil than any other state and has more proven oil reserves than any other state, it has, nevertheless, no monopoly on oil. Texas oil operators cannot pass increased tax costs on to the consumer by increasing the price of oil because the price of oil is controlled by the law of supply and demand on a nation-wide basis and Texas oil must sell in competition with oils from other states. We are already paying a higher oil tax than any other state, which means that Texas oil operators must absorb the difference in cost which the tax creates. In order to maintain the state's enviable position in the world's oil markets, it is decidedly necessary that cost factors should at least be no more than those of other competing states. As a concrete illustration of this, the tax on oil in Illinois is less than 2 cents per barrel, whereas in Texas the multiple tax levies on oil amount to 8.4 cents per barrel.

With all the cost items in the oil business fixed at levels which leave little opportunity for economics with which to offset the industry's increased tax load, we have no other alternative than to fight any attempt to saddle more taxes on oil. I have already mentioned the high wage standard prevailing in the oil fields today. In order to protect our employees and to prevent any possibility of lowering these wage standards, we must unite against the imposition of any additional taxes on oil. Every time we spend $1.00 for wages we now pay out 56c in taxes.

Because of our discussion of taxes, we do not want the industry's attitude on taxes to be misunderstood. We do not complain of fair and reasonable taxes. As a good citizen the oil industry recognizes its tax obligation to government and society and this obligation it willingly meets.



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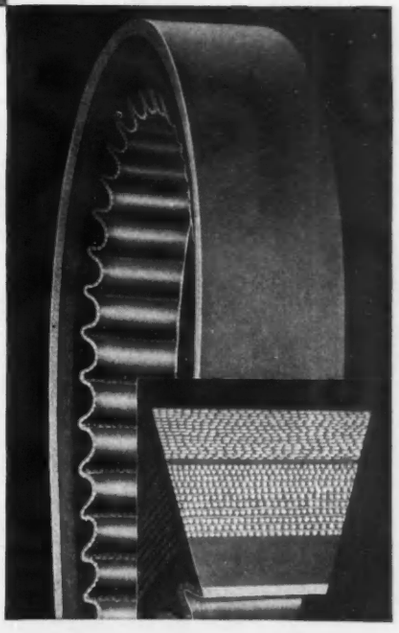

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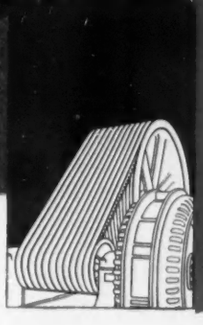

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Michigan's Allegan Boom

District has contributed third of state's activity this year and promises to be a factor in 1939. Geology is interesting

By NORMAN X. LYON Staff Writer

APPROXIMATELY 30 percent of Michigan well completions the first eight months of 1938 were in Allegan County and adjacent townships located on the western rim of the Basin. As of September 18, there were 240 active operations in Michigan. Of this number 104 were located in Allegan and Van Buren counties, Van Buren being the county bordering Allegan on the south.

In 1937, a total of 87 tests were drilled in Allegan County and none in Van Buren, out of a total of 955 for the entire state. Prior to 1937, western Michigan had been the locale of one important drilling campaign. This was in 1927-28, when Muskegon field was drilled. With the exception of comparatively quiet wildcatting in scattered townships, the area lay more or less dormant until early 1937.

The Allegan play, as it is commonly referred to, already has contributed considerable strength to the Michigan oil picture for 1938, and promises to carry well into 1939, whether or not second or additional oil zones are found by deep tests now drilling or planned.

Geographically, Allegan and Van Buren counties border Lake Michigan on the east, about 40 miles north of the Michigan - Indiana state line, comprising part of the southwestern Michigan block of counties. Muskegon lays about 45 miles north of Allegan.

Geological Description

Geologically, Allegan and Van Buren counties are not so easily explained or pictured. In a general description, the two counties lay on the near-extreme southwestern edge of the general Michigan basin, with the Mississippian formation present but much less pronounced than in the central part of the Basin, a characteristic which also holds true for the Devonian series down to the Niagaran, which carries through well to the edge of the Basin.

Various Theories Held

Geologists are farther apart on this particular district of Michigan than on almost any other. Several hold to the opinion that pressures which gave the Basin its formation riffled out along the edges, with resultant broken and unconformed structure and depositions. Test drilling has tended to show that structures deviate considerably from the broad northwest-southeast pattern in the central part of the state.

One school of thought favors the theory that Salina salt beds which are well pronounced in Western Michigan acted as a wide "greased plain," permitting frequent slipping or sliding of the upper beds with resultant sharp and ununiform buckling and trapping.

Still another theory, which of late has been receiving considerable attention, is that coral reefs and lensing will prove the key to final interpretation of the district's geology.

Development History

The development history of Allegan and adjacent southwestern Michigan counties dates well back to the turn of the century. Several small Traverse limestone producers, about 1600 feet deep, were drilled between 1904-12 near the city of Allegan, and later, between 1928-1932, at least six small producers were drilled and produced for a time from the Traverse for-

Brief Development History of Fields in Allegan and Van Buren Counties, Michigan

SALEM—Discovery well drilled Feb. 10, 1937, by Lentz & Miller, Inc. (Rabb 1), Section 16-4n-13w, Allegan County; Sea elevation 686.9 feet, Top Traverse 1478 feet; pay 1583-86 feet; total depth 1586 feet; 91 producing wells; Proven area 900 acres; now drilling 3; estimated total productive acreage 1200; average recovery per acre to July 1, 1938, 820 barrels per acre; average daily production July 1, 2280 barrels; gross recovery from discovery to July 1, 1938—944,982 barrels.

MONTEREY—Discovery well drilled March 7, 1938, by S. B. Hood Trustee (Wright 1), Section 9-3n-13w, Monterey Township, Allegan County; Sea elevation 798.7 feet; Top Traverse 1550 feet, pay 1612-13, 1618-20 feet; total depth 1620 feet; initial production 300 barrels, after acid 750 barrels; 23 producing wells; proven area 285 acres; now drilling 4; estimated total productive acreage 350 acres; average recovery per acre to July 651 barrels; over-all recovery to July, 97,324 barrels.

DORR—Discovery well drilled March 18, 1938, by Eureka Development Company (Widenfeller 1), Section 29-4n-12w, Dorr Township, Allegan County. Top Traverse 1620 feet, pay 1623 feet, total depth 1625 feet. After acid potential 250 barrels daily; 19 producing wells, proven area 190 acres; drill wells 2, estimated producing area 270 acres; total production to July, 16,974 barrels.

DIAMOND SPRINGS—Discovery well drilled July 18, by W. J. Cline (Helmar 1), Section 36-4n-14w, Overisel Township, Allegan County. Top of Traverse 1459 feet, total depth 1461 feet. Initial production estimated 1500 barrels natural; 33 producing wells; proven area 315 acres; estimated total area 500 acres; drilling wells 14; total production to September, 121,000 barrels.

OVERISEL "21" — Discovery well drilled August 17, 1938, by White & Stewart et al (Oldebekking 1), Section 21-4n-14w, Overisel Township, Allegan County. Sea elevation 710 feet. Top Traverse 1477 feet, total depth 1478 feet. Initial production estimated 800 barrels daily. Producing wells 6; proven acreage 115 acres, estimated total 300 up, drilling wells 9. Total production to September 10, 8600 barrels.

BLOOMINGDALE — Discovery well drilled August 16, 1938, by Fisher & McCall Trustee (Wiggins 1) Section 9-1s-14w, Bloomingdale Township, Van Buren County. Top Traverse lime 1219 feet, total depth 1221 feet (top same formation on two offsets between 1239-45 feet, indicating measure on discovery in error). Initial production estimated between 1500 and 3500 barrels daily. Producing wells 5, drilling wells 21; development not adequate for acreage probabilities.

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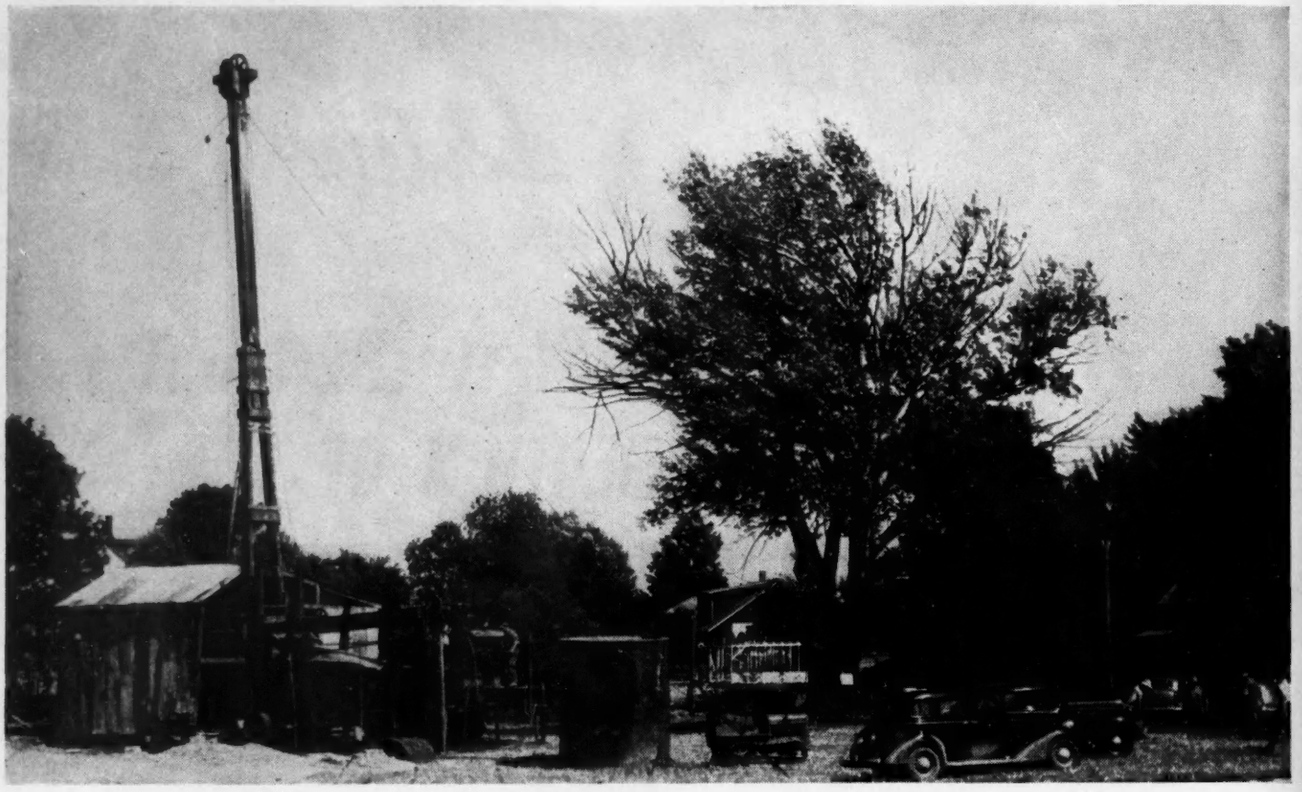


Typical drilling operation in Michigan is this view of an Allegan well. Using drilling machines and spudders, wells are completed to 1450 feet in 10 to 15 days.

A Typical Well Log of the Allegan District is S. B. Hood's Wright 1, Section 9-3n-13w, Discovery Test of the Monterey Field

Sea Elevation 798.7 feet. Commenced 11-1-37; completed 3-7-38. Initial production 300 barrels natural; after acid potential 750 barrels. Casing record: 10"—81 feet; 8¼"—152 feet; 6⅝"—270 feet; 5-3/16"—1573 feet. (Note: In the case of the casing record it is not typical, 8-inch has not been necessary in most cases, with the 10-inch drive string fully landed, and, 6⅝-inch casing is standard for setting as producing string at Traverse casing seat.)

MISSISSIPPIAN		
Pleistocene		125
Coldwater		
Muck, black	20	145
Shale, sandy	7	152
Sandstone	18	170
Sandstone, broken	18	188
Coldwater	22	210
Mud	50	260
Shale, blue	20	280
Mud	50	330
Shale	40	370
Mud	170	540
Lime, shale	50	590
Lime, broken with shale	25	615
Mud	155	870
Mud, gray	25	895
Mud, blue	15	910
Red Rock	25	935
Ellsworth		
Mud	35	970
Shale, green	15	985
Mud	30	1015
Shale, green, muddy	23	1038
Mud	67	1105
Limestone, shells & Shale	75	1180
Mud	35	1215
Lime, shells and shale	25	1240
Shale	30	1270
Antrim: (Top 1328?)		
Shale, brown	20	1290
Shale, brown and shells	20	1310
Shale, brown	70	1380
Shale, brown and gray	29	1409
Shale, brown	132	1541
DEVONIAN		
Traverse		
Lime, shale	9	1550
Shale, limey	60	1610
Lime (pay) 1612-13; 1618-20.		

mation. In this early period several major companies were directly interested in the district, with the Pure Oil Company carrying out extensive core testing as well as drilling several deep tests. Pure dropped most of its acreage before the1937-38 development got under way.

Credited as the discovery of the current development campaign is Lentz & Miller Inc.'s Raab 1, NW SW NE, Section 16-4n-13w, Salem Township, Allegan County, brought into production on February 10, 1937, with a 250-barrel yield after acid from Traverse limestone at 1616 feet.

Development of Salem pool was much less spectacular than later opened districts. Major companies and large independents were already concentrating on Buckeye field in Gladwin County, opened two months prior to Salem, and Traverse limestone production was in ill repute with the majority of Michigan operators. Both the Saginaw and Muskegon fields' Traverse production (the first two developed in Michigan) had proven short of life, and financial headaches for most operators. As a result, the Traverse limestone was shelved as treacherous, erratic and something to be avoided.

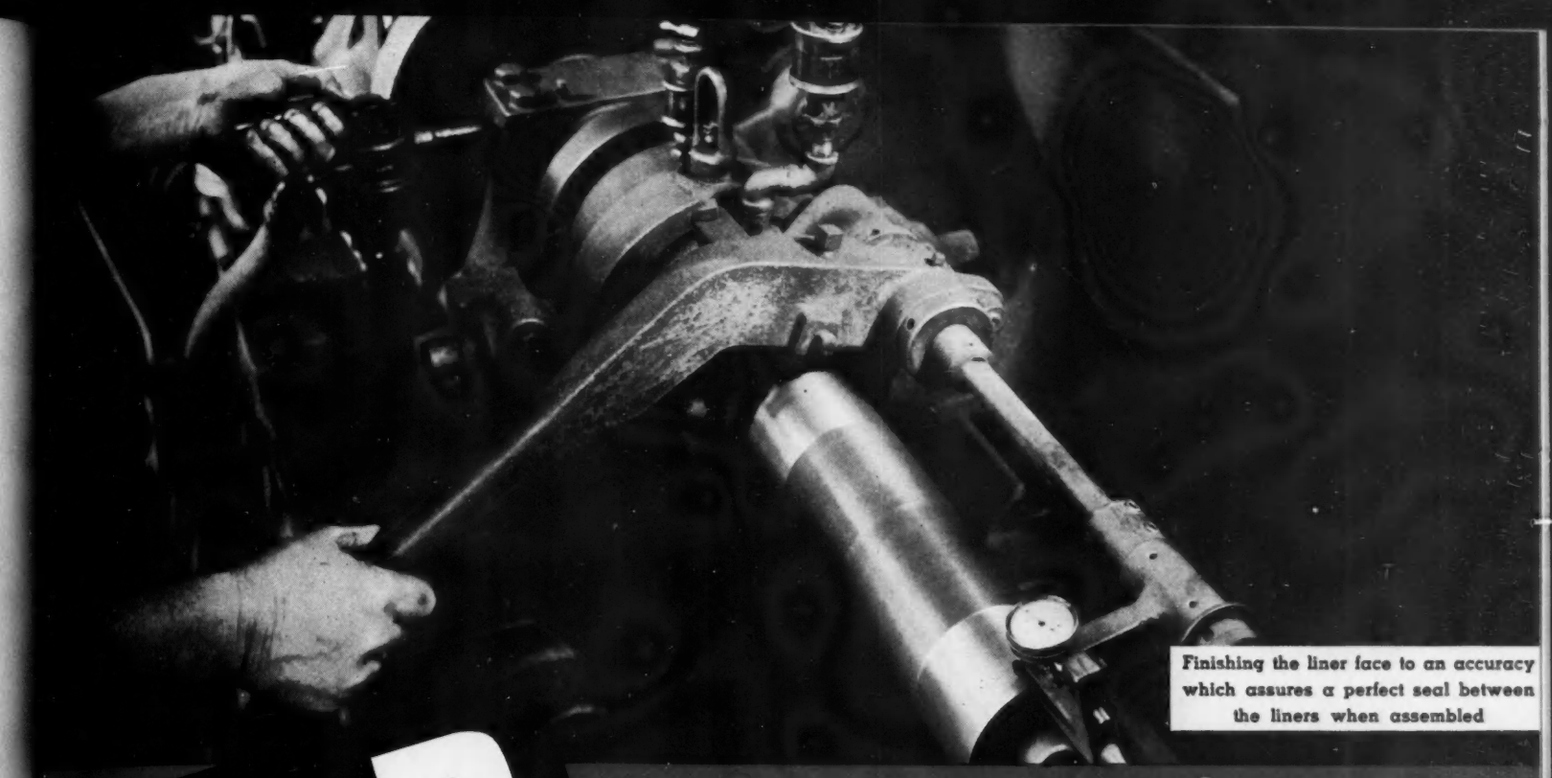
Traverse More Attractive

Lentz & Miller Inc. and Michigan Development Company, or interlocking companies of one or the other, developed about 80 percent of the Salem field.

Discovery early in the spring of 1936 of Monterey and Dorr pools in Allegan County, coupled with the fact that many operators were reaching the conclusion, from production history in Salem, that the Traverse might not be as black as first painted, precipitated extensive leasing and development all along the southwestern Michigan district. Large independent companies which had restricted operations to deep zones in the past turned to Allegan and adjacent counties in earnest. Likewise, major companies directed their land and geological departments into the district.

Six major districts have been developed in the two counties and four smaller areas.

As might be readily concluded from a study of the development in the six different districts so far discovered, any one alone would not be of outstanding importance. However, viewed collectively, the district as a whole assumes considerable significance in several as-



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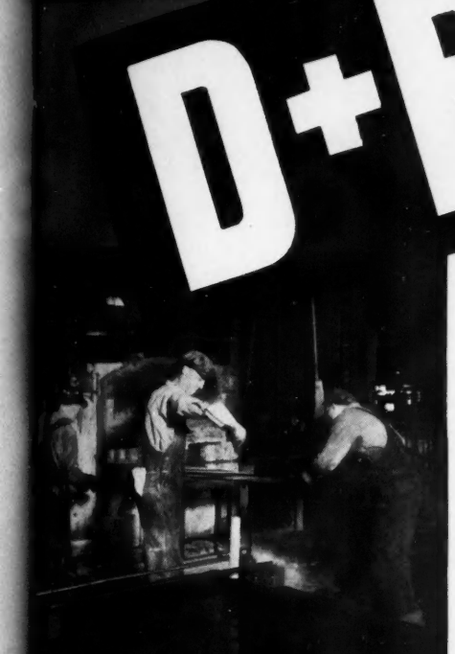

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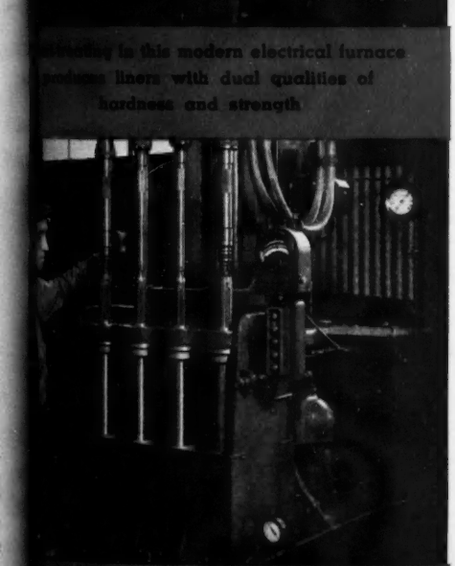

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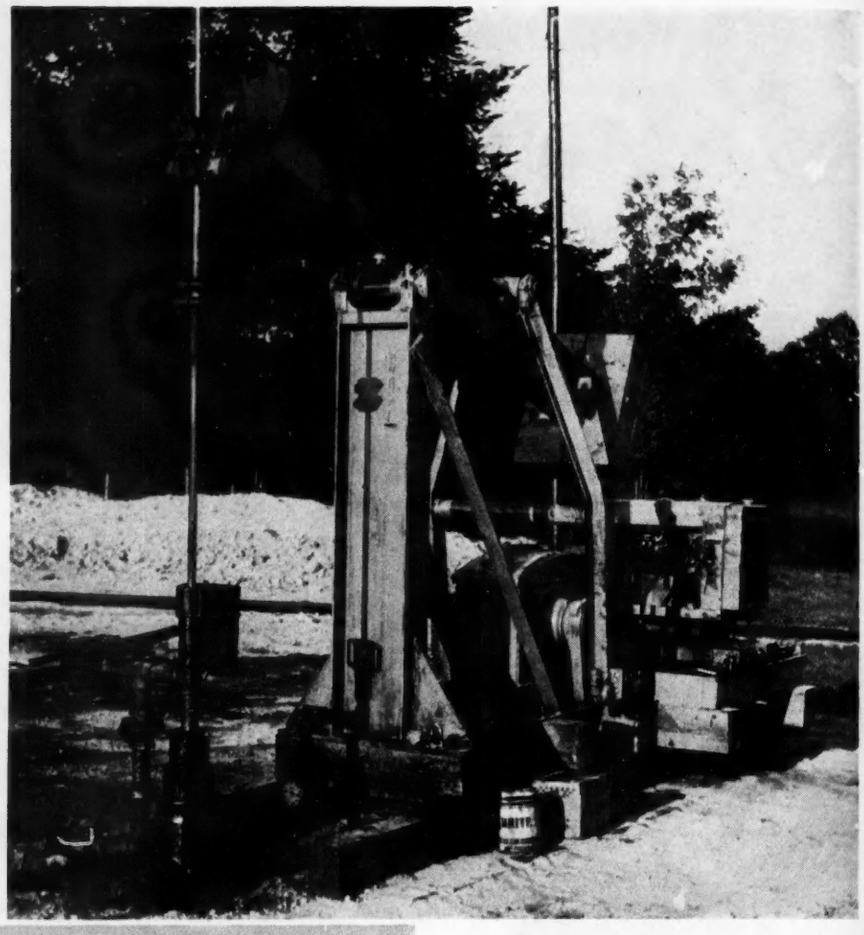
pects in Eastern States development.

Collectively, the district this year has had 177 completions out of the state's total of 602. Of the 177 completions 101 were commercial oil wells with an estimated potential of 32,662 barrels. Seventy-six tests were abandoned as failures.

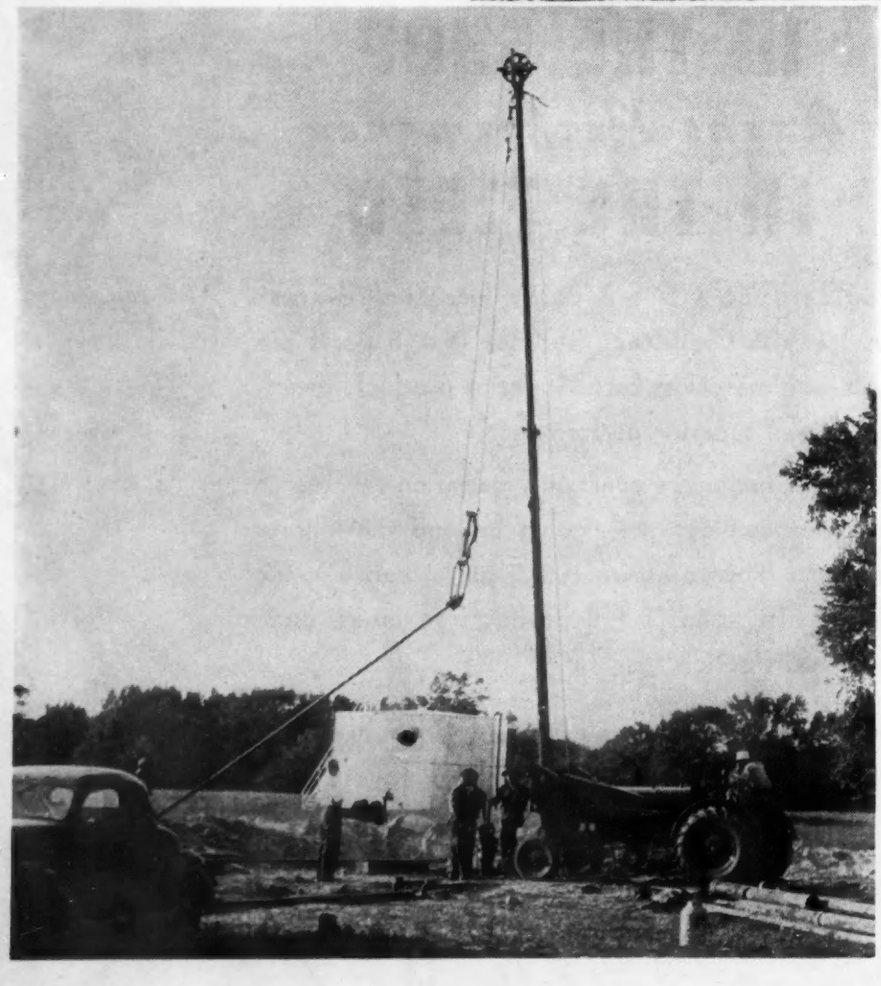
Production by months for the Allegan County district as compiled by the Oil & Gas Association of Michigan is as follows (figures in barrels):

January	111,462
February	128,298
March	112,253
April	165,930
May	162,758
June	107,732
July	129,714
August	237,197
Total	1,555,624

Production figures compiled by the association for August this year showed a total state production of 1,524,962 barrels, with the Allegan district second in total output for the first time. Development in the Van Buren and Diamond Springs pools was cited as the reason for the August increase.



Single-well jacks are used on most Allegan leases. First fields used second-hand equipment, but newer areas are using new.



This type of portable equipment for pulling tubing and sucker rods is used in the Allegan shallow 1200-1600 foot district.

Salem, the only field developed in Allegan County up to this year, produced 475,664 barrels of oil in 1937 to give the district for 20 months about 2,000,000 barrels production.

Of 38 different oil pools in Michigan developed up to 1938, only 9 had produced 2,000,000 barrels or more.

Economic Geology

The economic geology of the district is interesting. Because of the shallow producing zone and comparatively favorable drilling conditions, an average cost of $3500 to $4000 may be struck for drilling a test on a dry hole basis. To drill a well, equip with tubing, pump jack and a 1000-barrel storage tank most operators figure in the neighborhood of $6000 to $6800. This rep-

Refinery Analysis of Two Different Allegan Crudes and a Dundee Lime Sample from Central Michigan.

	Bloomingdale	Overisel	Porter (Dundee)
Gravity	41.2	41.7	40.6
Salt	nil	nil	.....
Sulphur	.79	.69	.26
300 End Point Gasoline	23.5 (66.2 gr.)	26 (65.1 gr.)	8.2 (79 gr.)
390 End Point Gasoline	34	38	30.8
Kerosene	15	11	22
Distillate	11.3	13.3	...
Gas/Oil	18.3	9.6	12.9
Bottoms	23.4	28.1	21.2

resents about one third the cost of drilling and equipping wells drilled in the central part of the state, where chief production is obtained from Dundee and Monroe zones between 3200 and 3900 feet.

As a consequence of the lower development costs, operators are in a position to accept possible lower ultimate acre recovery, to take longer chances on drilling edge production, and to wildcat much more freely than in the central part of the basin. The hazards of sharply dipping structures, unconformities, and faster depletion of the formations does not prove as serious a factor as in the districts requiring triple capital investments.

Quick Payout

Development in proven areas in the central part of the basin for Dundee production ordinarily is figured on a 12 to 20-month payout. Most of the pools are still too young to arrive at a fair payout average in Southwestern Michigan. However, 3 to 8 months has been figured by many of the most active companies. In the Bloomingdale and Diamond Springs districts, where the flush production has been higher than in other pools, numerous wells have paid out in 10 to 15 days—others in less.

Operating and developing costs set up by one company, showed the first well had cleared the other three being drilled 26 days after completion of the first. Naturally, the average for any given field would be brought down considerably as development moved out toward flanks and potentials dropped by the dissipating of reservoir gas pressures.

Recovery Estimates

The ultimate yield for pools in the Allegan district still is subject to much difference in opinions. However, most operators are inclined to figure between 1500 and 3500 barrels to the acre. Salem, the oldest field in the play, had recovered about 900 barrels to the acre up to the first of August and is virtually 100 percent on pump production. Comparative production charts of Salem and other pools indicate some of the pools, such as Bloomingdale and Diamond Springs, may show greater ultimate recovery.

Best recovery to date in Michigan for a major area is in the Porter district, Midland County, with 6804 barrels per acre up to July 1 this year. This field of Dundee lime production comprises 3990 acres. The Sherman field, Monroe lime production in Isabella County, had recovered 3391 barrels per acre up to the same date. North Buckeye, Gladwin County Dundee limestone production, averaged 3356 barrels per acre from 2560 acres the first 18 months.

Porosity Important

The Traverse limestone, member of the Devonian, has been the only formation to date to produce commercially in the district. Chief production comes from just below, or at the contact with, the Antrim shale, which caps it. In some instances second and third pay zones have been drilled. Porosity, it has been found, is a factor equally as important as structure. Porosity varies widely and in some districts, such as Diamond Springs, where flush potentials of 150 barrels an hour have been obtained. formation samples show comparatively large honeycombed porosity conditions. Drillers describe the pay in the higher potential wells as "mush."

A producing contour of between 50 and 60 feet, has been established in Salem, from 35 to 45 feet in Monterey, from 45 to 50 feet in Diamond Springs. Abrupt structural drops frequently occur, with the result that dry holes 20 to 50 feet low offset producing wells ranging from 100 to 500 barrel potentials.

In central Michigan, where the structures have a more gentle sweep, forewarning of flanks and edges avoids drilling much nonproductive acreage. In most every instance in the Allegan district pools, a tight fringe of dry holes circles, often as offsets, the producing wells in the field.

Drilling Practice

The district continues to be developed almost exclusively with drilling machines and spudders. About 65 percent of the drilling is on a contract basis with costs ranging from $1.90 to $2.25 per foot. Standard practice is to drive 10-inch casing in the drift, which ranges from 80-90 feet, to about 300 feet. With the exception of the new Bloomingdale district, where 260 to 290 feet of pipe is being landed, other pools have averaged less than 200 feet. In the early development operators frequently failed to land enough drive, with the result that a secondary string of 8¼-inch casing had to be run to shut off upper water and mud zones which brought caving holes.

Current practice is to put in the maximum amount of drive possible to get below this cavy zone. Where this is done, in the majority of cases, drilling can be completed to the top of the Traverse, which offers a satisfactory seat, without additional casing strings. Standard practice is to cement 6⅝-inch casing as the producing string. In some cases packers have been used.

13 to 16 Days for Drilling

Drilling time for 1250 to 1460 foot tests has been averaging between 13 and 16 days with several completions made in less than 9 days. The record for the field up to September 18 was established by Voorhees Drilling Company using a spudder, a contract job for Fisher and McCall on Wiggins B-1, Section 9-1s-14w, Bloomingdale Township, Van Buren County. Contractors, using 3 two-man shifts, landed 297 feet of 10-inch drive and set 1237 feet of 6-inch casing to top of producing formation in 6½ days, drilling and casing time.

Acid treatment, ranging between 500 and 2000 gallons, either immediately after completion or when flow wells drop to 200 barrels or less, is common procedure. The soft lime pay formation in most cases takes acid well with results over the field expected to show a higher average than in Dundee lime fields.

Producing Practice

Where wells are treated 2-inch tubing is set, as also is the case when wells are placed on the pump. However, not until recently have

Top is photograph of an out-crop specimen of Traverse limestone, producing horizon of Allegan County. Below is Traverse limestone fossil.

operators made a general practice of tubing natural flowing wells immediately upon completion. First completions in the Diamond Springs pool, where flush production ranged up to 70 and 100 barrels per hour natural, were produced through 6⅝-inch casing. Under pressure of the State Geological Survey wells now are tubed. While Michigan does not have an oil control bill, the Conservation Commission has power to require tubing of flowing wells. Failure to comply carries a penalty of fine and/or imprisonment up to $100 and 90 days. The department also may under this act refuse to approve future drilling permit applications to a company failing to meet the commission's regulations.

In this connection, discoverer's of the Overisel-21 pool, about three miles northwest of Diamond Springs, immediately tubed the discovery and insisted on the measure being enforced by other operators in the pool. As far as known, the discovery well in this pool is the only one where actual flow bean and gas/oil ratio tests have been made. Operators determined that a million feet of gas was being dissipated to lift the well's production of 450 barrels per day through 5-3/16-inch casing. Gas required to lift the same amount of fluid through 2-inch tubing was found to be 240,000 cubic feet per day. This well had reached its 34th day of flow production with a drop from 250 to 225 pounds tubing head pressure on September 20. The Diamond Springs discovery, produced through casing, flowed 31 days, and then was placed on the pump.

Single jack installations comprise the bulk of pump operation for the field with a few 4 and 6 multiple units. Most outfits are powered by fuel. Electric pump power has been installed on three leases in Diamond Springs and Overisel-21 pools.

Small portable power units for pulling tubing and rods have been purchased by most operators. Ordinarily, cleaning out and replacing of cups has not been necessary more than once in 4 to 6 months. Many operators using from 18 to 36-inch stroke are lifting from 150 to 300 barrels with jack pumps. Many of the wells after going off regular flow production, continue to flow part of their production from pump agitation.

Water has not become a major problem in the field. Abandonments probably will come faster when water does invade the formation.

Standard spacing pattern for the Allegan district is one well to 10 acres, but due to town-lots and irregular shaped tracts, this pattern has not been followed as close as in central Michigan. Diamond Springs has numerous town lot wells, and drilling now is under way on town-lots in Bloomingdale. Attempts to communitize have been only partly successful.

Flush wells have been produced against back pressures ranging from 250 to 450 pounds on the casing or tubing. With exceptions, this has been necessary due to shortage of storage, rather than to a field operating practice to conserve reservoir pressures. However, it has been fairly well determined that the shallow zones will not stand open flow production through casing over more than a short period of time. This is evident in both the Monterey area and Diamond Springs, where the flow life of the field has not spread much over 30 to 50 days.

Orderly Development in Future

New pools undoubtedly will be developed more orderly. That is, tubing requirements and some method of proration to conserve reservoir energy now are being favorably considered by many operators.

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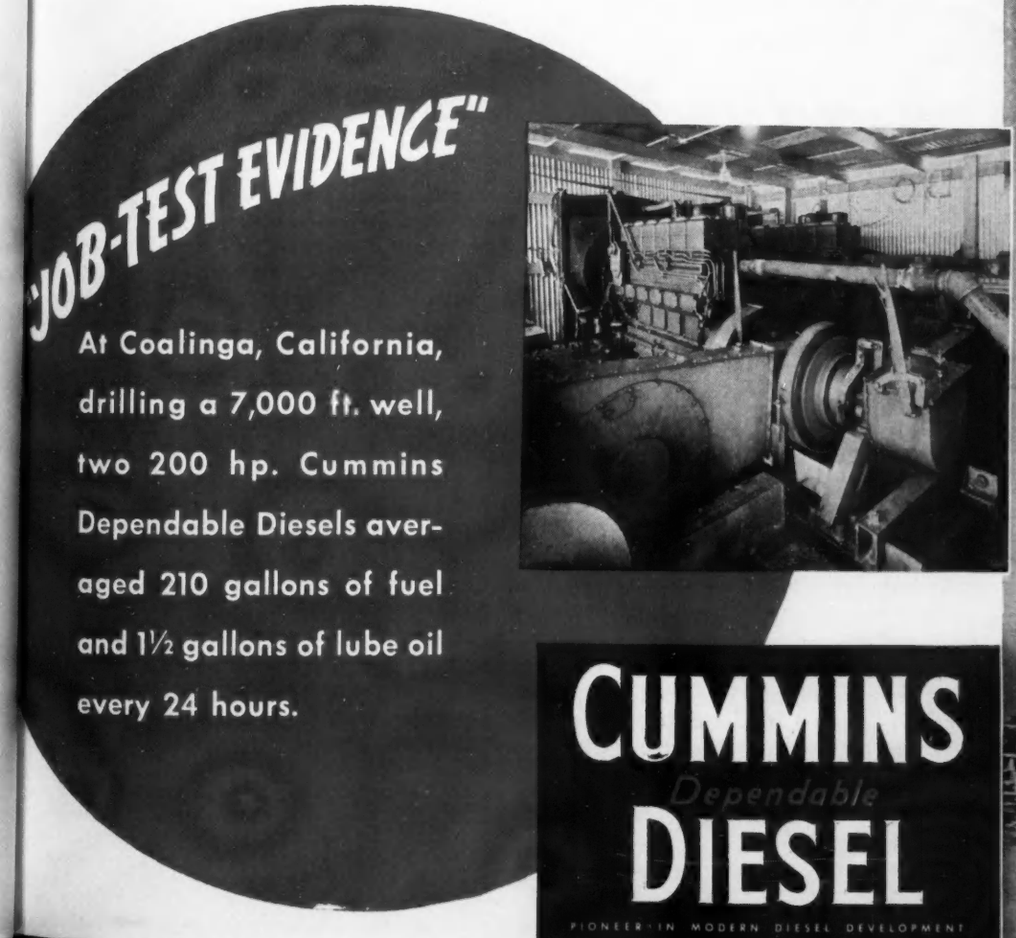
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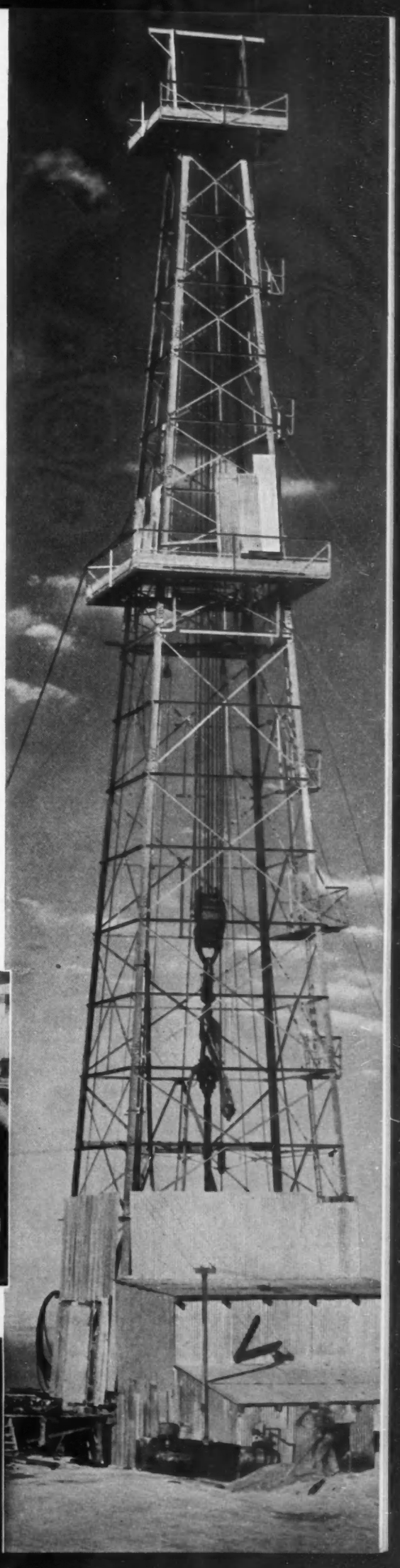

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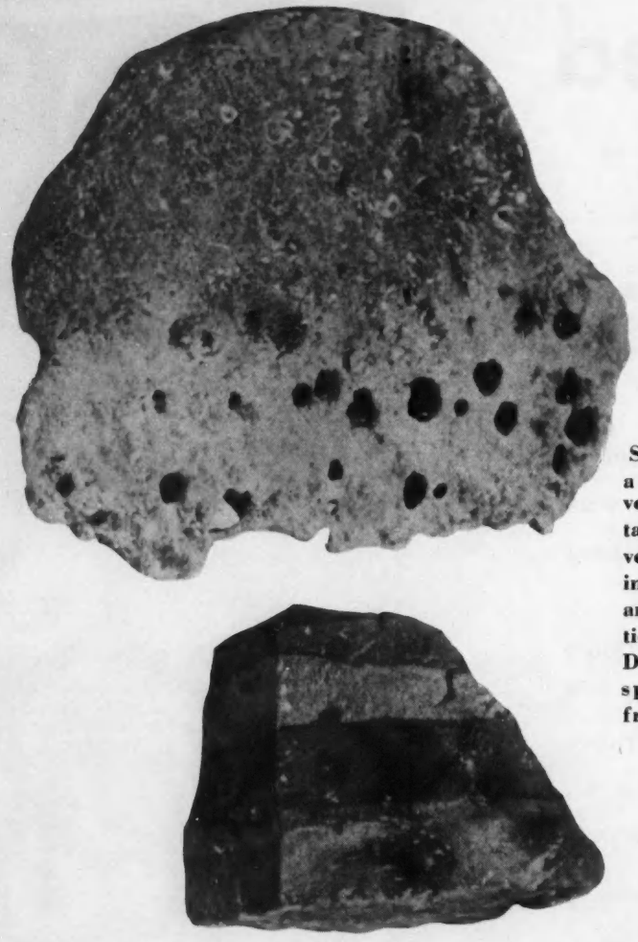


Specimens: Top, a section of Traverse limestone taken from Traverse Bay, showing large pores and coral condition. Below, a Dundee limestone specimen taken from a Michigan outcrop.

condition of the limestone in districts of different pools, drainage is believed to be extensive. One lease, a town lot of one acre, on which one well was drilled, produced 35,000 barrels of oil the first 50 days, but 5 offsets were placed on the pump almost immediately upon completion.

The potential of the entire district was estimated between 25,000 and 35,000 barrels as of September 15. Pipe line demand at the same date was 7000 barrels per day. Complete coordination had not been worked out between the three different carriers in the field, but an attempt to equalize a pipe line proration ranging between 200 and 400 barrels in flush areas, was being made.

The district is now served by three chief buyers, Naph-Sol Refining Company of Muskegon, Commonwealth Pipe Line Company of Muskegon, and Simrall Pipe Line Corporation of Mt. Pleasant. About 60 miles of 4-inch line coupled and screw connected, has been built, all since April of this year. Shipment is made from these short lines terminating at nearby railroads to various refining centers. Truck tankers continue to move about 30 percent of the crude to market destinations.

Allegan County has had the chief concentration of development. Commercial production has jumped south into Van Buren County only in the past two months. Besides the six recognized commercial pools developed, at least four other areas, Otsego, Throwbridge, Allegan and Ottawa have produced one or more small wells.

With wildcatting requiring comparatively small capital, $5000 to $10,000, it is probable that the entire southwestern Michigan will be worked over and re-worked during the next year or more. Past development has shown that the pools covering 150 to 500 acres easily can be missed; that a difference of 1300 feet can be the difference between structure and production and absolute failure.

With a single exception, Gulf Refining Company, no major has actively tested in the Allegan-Van Buren play during the current play. Gulf drilled a non-productive offset in the Dorr field in early summer and now is testing a wildcat block in southern Van Buren County. All other operations have been by independents, many of whom had not operated in Michigan up to this year. Considerable Chicago and Indiana money has been directed into the play during the past 6 months.

Leasing is now active over a 60-mile line strip bordering the West-Michigan coast line and extending out from the coast east as much as 35 miles. Majors are represented in this play. Wildcat blocks, originally taken up for 50 cents to $1 per acre, now have jumped to $2 to $4 per acre, and frequently carry 30 to 90 day drilling clauses.

Three Trends Exist

Despite the broken and still cloudy picture of the geology of the area, at least three fairly well defined trends have been worked out. One of these carries the Salem pool; another Overisel-21, Diamond Springs and Monterey; and the third the Bloomingdale pool. Current testing is following these trends.

As cross trends are strongly suspected, wildcatting is not being held close to a northwest-southeast pattern, but jumped at short intervals, east-west, and north-south.

The possibility of deeper zone production, likewise, is a factor not to be overlooked for the future of the district. Oil/gas shows have been logged on a number of the deep test wells. Until the shallower zones, however, have been more widely developed, no extensive wildcatting play for the deeper zones is looked forward to. Of about 40 wildcat tests now drilling in the district, one is projected to the Trenton.

As an indication of depths to be drilled in this area for lower formations, known to carry oil in different districts, the following log of Wolverine Oil Company's Vought 3, Section 32-4s-14w, Decatur Township, Van Buren County, is interesting: drift, 295 feet, Traverse, 915-1075 feet; Dundee, 1145-1275 feet; Sylvanian, 1275-1320 feet; Suliran, 1320-1625 feet; Niagaran, 1625-2265 feet; Ordovician (Cincinnatian), 2265 - 2420 feet; Trenton, 2420-2523 feet (buff to brownish buff dolomite). This test was drilled in 1929 and logged no commercial oil shows below the Traverse. At 909½-979 feet (Traverse) a pay tested 16 barrels of oil natural and 50 barrels after 40-quart shot. It was abandoned within a month, however.

Edited by
WM. V. GROSS, Associate Editor

Venezuela Output

Export shipments are higher, as both crude oil and gasoline production runs ahead of year ago

Venezuela exports are ahead of last year

Venezuelan exports of crude oil and gasoline are running well ahead of those of last year, totals for the first eight months of 1938 and 1937 being 17,388,315 metric tons and 15,785,303 metric tons, respectively, according to statistics compiled by Louis V. Vogelweid, clerk to the American commercial attache at Caracas. If the current rate of export is kept up, the excess of 1938 over 1937 should be in the neighborhood of 2,500,000 metric tons, or roughly, 17,500,000 barrels, using the common factor of seven barrels to the metric ton for conversion.

For purposes of comparing the progress being made in exports of Venezuelan crude and gasoline, the accompanying table gives by months exports of crude for 1938 and 1937.

Going a little further into the matter of exports from Venezuela, a definite relation between production by companies and exports by companies is observed. For example, Venezuelan Oil Concessions, Limited, is listed as the greatest individual producer in Venezuela for the first eight months of the year, having been accredited with recovery of 5,312,532 metric tons (or about 37,187,724 barrels) during the first eight months of the year, and that company is also listed as the greatest exporter of Venezuelan crude for the same period, its shipments having amounted to 5,303,596 metric tons, or about 37,125,192 barrels, using the rough conversion factor of seven.

Refinery runs in Venezuela of several of the above companies during August were as follows (figures in metric tons): Caribbean Petroleum Company's refinery at San Lorenzo, 61,647; Mene Grande Oil Company's refinery at Cabimas, 9407; Compania de Petroleo Lago's refinery at La Arriaga, 37,582; Colon Development Company, Limited's, refinery at El Cubo, 1399; British Controlled Oilfields, Limited's, refinery at El Mene de Mauroa, 497; and Standard Oil Company of Venezuela's refinery at Caripito, 11,275 tons.

Two years ago Venezuela had to import most of her gasoline, ordinary and aviation, and lubricating oils, and the domestic production thereof was naturally very limited. Today the nation makes all ordinary gasoline necessary for internal combustion engines, and is importing only lubricating oils and aviation gasoline. While the domestic production of gasoline last year amounted to only 101,492 metric tons, about 10,149,200 barrels, progressive decreases in the retail price of gasoline, plus increases in gasoline driven vehicle registrations, are expected to boost that figure considerably for 1938. Additional highways essential to industrial undertakings started in mid-1937 and in 1938 will contribute in no small way to increased local production and consumption of ordinary gasoline. As a matter of fact, the prediction is heard that Venezuela will be producing a substantial part of her lubricating oil requirements within a couple of years, if the increase in automobile registrations keeps the pace it has established in the past five years. Fuel oil, production of which amounted to 888,061 metric tons in 1937, is expected to constitute the bulk of domestic refinery production in Venezuela for several years. Production of that product in 1938 probably will pass the 1,000,000-ton mark easily, it is said.

In connection with the progressive reductions in retail gasoline prices which

Venezuela Exports for First Eight Months

(Figures in Metric Tons)

MONTH	1938		1937	
	Crude Exported	Column to Left Included Gasoline in the Amount Indicated Below	Crude Exported	Column to Left Included Gasoline in the Amount Indicated Below
January	2,145,608	1,582	1,162,737	None
February	1,898,166	1,444	1,489,476	1,579
March	2,133,847	1,308	2,024,151	1,781
April	2,089,138	1,539	2,074,932	1,621
May	2,258,643	1,543	2,284,878	1,666
June	2,308,359	1,451	2,112,497	1,507
July	2,266,213	1,584	2,316,767	1,496
August	2,288,338	1,628	2,319,861	1,647
*Totals 8 months	17,388,315	12,083	15,785,303	11,300
September	.....	.....	2,268,317	1,514
October	.....	.....	2,431,884	1,628
November	.....	.....	2,339,716	1,906
December	.....	.....	2,248,411	.....
*Totals	.....	.....	25,073,433	18,006

* Discrepancies explained by fractional tons omitted here.

Venezuela Production and Exports by Companies for First Eight Months of 1938

(Figures in Metric Tons)

COMPANY	Production	Exports
Caribbean Petroleum Company	1,258,321	837,140
Venezuelan Oil Concessions, Limited	5,312,532	5,303,596
Colon Development Company	447,787	435,911
Lago Petroleum Corporation	5,230,165	*4,990,478
Mene Grande Oil Company	2,925,524	2,953,866
British Controlled Oilfields, Limited	48,608	48,262
Central Area Exploitation Company	11,980	.....
Standard Oil Company of Venezuela	2,952,108	2,819,059
Compania de Petroleo Lago	6,639	.....
Totals (Metric tons)	18,193,667	17,388,315

* This figure included 12,083 metric tons of natural gasoline.

have attended increased domestic consumption, a glance at those declining prices is of interest. By years and Bolivia's, the prices per liter have been as follows: 1928, 0.45; 1929, 0.45; 1930, 0.45; 1931, 0.40; 1932, 0.40; 1933, 0.32; 1934, 0.26; 1935, 0.26; 1936, 0.23; 1937, 0.21; 1938, 0.18; second 1938, 0.16. It takes 3.17 Bolivars to make one U. S. dollar.

Mexico reports sales to sister republics

Important oil and products sales in Brazil are seen by the Mexican government, with the granting of representation rights to Correa E. Castro, Ltda., Rio oil distributors.

In announcing the movement last week of the first lot of a large consignment of asphalt, that of 500 tons to the Costa Rican government, business that was obtained because Mexico underbid two American firms, the Mexican administration remarked: "We have a special interest in favoring our sister republics with prices that will break the monopoly that has existed up to now. This explains our justifiable and obvious success in capturing foreign markets."

Transcontinental, Standard subsidiary, was denied an injunction by a local court against expropriation of its headquarters building in Mexico City that it shared with Huasteca. The company is to carry the case to the supreme court.

Mexico makes cash deal with Italy

Mexico's recent contract with the Italian government for the supplying of oil and products calls for 7,000,000 barrels at a spot cash payment of $5,000,000, but does not even mention any kind of an exchange, although news reports emanating from Mexico City and Rome specify a barter for silk, artificial silk, automobiles, and tankers. It is understood that Mussolini so desires oil for emergencies that he instructed his two agents who negotiated the deal here to yield to Mexico's demand for hard cash. First deliveries on the order are expected to start from Tampico about November 15.

Mexican Federal Zones

Review of leases held by the expropriated oil companies in federal zones is being made by the Mexican government, which hopes to obtain a substantial annual revenue by releasing these properties.

Gulf Refining interested in Danish territory

Gulf Refining Company has recently acquired control of Danish-American Prospecting Company, which had been granted a concession by the Danish government for a period of 5 years.

Equipment for a preliminary survey by means of a gravimetric method has been moved to the territory under consideration. It is contemplated at some later date, to check results of this survey with the seismic method in order to determine any possible drilling sites.

M. Rawlin, an American engineer, is in charge of this preliminary exploration work. The Gulf company has the intention to rpeat such geophysical surveys in a more detailed manner before a drilling campaign is started.

Canadian Fields

Deep Turner Valley extension promises to prove 10 square miles and to treble the field's area.

THE Turner Valley field of Alberta, Canada, was extended more than 1½ miles westward last week when Okalta Oils, Ltd.'s, 6 stopped drilling in the Madison limestone at 10,205 feet after finding a horizon described as porous as that found by the large producers to the east. The strike, exact value of which is as yet unknown, is considered one of the most important in Canadian oil history. It probably proves an area of 10 square miles, trebling the size of the field.

The hole, deepest drilled in the British Empire, was being cleared of rotary mud with gas from a neighboring well piped at the low pressure of 250 pounds to the square inch. Many of the some crude producers to the east required a pressure of about 1500 pounds to clear. Of even greater encouragement to operators was the fact that there was no water instrusion, as had been feared because of the well's distance from the proven crude area and the depth of the hole necessitated by the sharp dip in the limestone on the west side of the flank.

Anglo-Canadian Oil Company, Ltd., one of the principal independent operating companies in Turner Valley, announced consideration was being given to construction of a $1,000,000 refinery at Calgary to process 5000 barrels of crude daily. The project would include construction of a crude oil pipe line from the field, a distance of about 50 miles.

Such a plant, together with the British American Oil Company, Ltd.'s refinery of like capacity now under construction at Calgary, would go a long way to improving the market for Turner Valley crude. A. J. Nesbitt, a director of the Anglo-Canadian company, reported that the company's recently acquired refinery at Brandon, Manitoba, operated at a capacity of about 800 barrels a day during August and September, and revealed that plans are under way for enlarging the plant and installing a cracking unit.

Dark spot in the Alberta oil picture last week was a further reduction in the allowable production of Turner Valley wells from 14,500 to 11,500 barrels per day, by order of the Provincial Oil & Gas Conservation Board. It follows by one week an order cutting the allowable from 22,000 barrels daily.

W. F. Knode, board chairman, reported that refineries have large quantities of crude in storage and were unable to reduce the amount in their tanks under the 14,500 barrel output with existing prairie demands. The present market will be met with the 11,500 barrel allowable, he said. The reduction brings the field's production to about 23 percent of capacity, estimated at about 50,000 barrels daily.

The first test in the Savannah Creek district was being prepared last week by Anglo-Canadian Oil Company, Ltd., with equipment for the wildcat being moved to location on Section 20, Township 14, 4-w5. Acreage to the north and to the south of the Anglo-Canadian holdings have been acquired by other large interests, insuring a brisk development program if the wildcat is successful.

J. L. Irwin, statistician for the Alberta Department of Lands and Mines, reports the province has 73 crude producing wells, of which all but 10 are in the Turner Valley field. Of the 63 Turner Valley crude wells, 59 are producing from the deep Madison limestone and 4 from shallower formations.

Canadian special session to deal with Turner Valley

With provisions of Alberta's Oil and Gas Conservation Act being challenged in the courts on one hand and openly violated on the other, Premier William Aberhart last week called a special session of the Provincial legislature for November 15 to deal with the Turner Valley crude oil and natural gas situation.

The action follows these developments of the past few weeks:

1. A court attack on an order of the Alberta Petroleum & Natural Gas Conservation Board holding production of naphtha gas wells in north Turner Valley to the available demand for natural gas made by Miracle Oils, Ltd., and Mercury Oils, Ltd., operator of naphtha wells, and Gas & Oil Products, Ltd., operators of an absorption plant. A hearing on the action in the Supreme Court of Alberta is pending.

2. Open defiance last week of a board's order classifying Model-Spooner-Reward Oils, Ltd.'s, 1 as a gas well, rather than a crude producer, and of the allowable set for its sister well, the No. 2. W. C. Fisher, managing director of Model Oils, Ltd., said that both wells would be operated "at possible maximum efficiency despite orders of the board." Charging that the conservation board's orders, designed to hold production to available demand, "provides not for conservation but confiscation and expropriation," he said his company was "ready to face any prosecution the board cares to launch."

3. Appointment of a Royal commission to probe all angles of the Alberta petroleum industry. The commission met briefly a week ago and then adjourned to December 5 to permit its counsel and oil company officials to gather evidence and prepare information.

While details of measures to be brought before the special legislative session were not announced last week, it is understood that the government has in mind plugging a loop-hole in the present conservation act which enables appeals from board orders during which time enforcement of the orders could be withheld.

Personal Glimpses and Notes From Here and There in Venezuela

By WM. V. GROSS, Foreign Editor The Oil Weekly

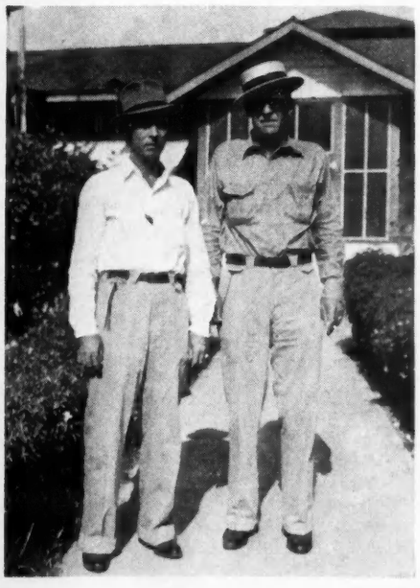
LEON C. BOOKER of Caracas, chief legal adviser of Lago Petroleum Company, and W. T. S. Doyle, who is similarly employed for Caribbean Petroleum Company in Venezuela, have through years of tedious research and trial developed as a hobby the world's hottest hot sauce and are producing it under the trade name of "Meado de Pantera Anejo." Demand for the sauce, especially by oil men who have visited Venezuela and gone with either of them to Calvario's to sample the condiment, has grown to where production is a real problem—if not a nuisance. This is especially true because the concoctors are said to examine every red pepper that goes into the liquid fire with miscroscopic thoroughness. And then, too, the Aguardiente used for a base to preserve the sauce must, according to requirements of the manufacturers, be sufficiently strong that one teaspoonful, taken orally, will explode nine years' accumulation of dandruff off a man's head. For this test, Booker explains, they generally select the travelling representative of some hair tonic manufacturer. But close observers of Messrs. Doyle and Booker predict they will not continue to be in the business long because, aside from the production problems of "Meado de Pantera Anejo," they give the stuff away instead of selling it, and, as Booker himself complained: "Every time some palooka in Palembang or Calcutta gets polluted over drilling a dry wildcat, he cables me collect to send him by the next tanker a case of "Meado de Pantera Anejo." However, both Booker and Doyle still claim the stuff will do everything from curing the mumps to restoring youth.

Captain T. B. Christensen, now on vacation in the United States, is a familiar figure on rivers of Eastern Venezuela and on the Gulf of Paria, where he handles crude shipments, miscellaneous cargo and passengers for Standard Oil Company of Venezuela.

CHESTER CREBBS, general manager for Mene Grande Oil Company in Western Venezuela and now on vacation in the United States, will move to Caracas from Maracaibo about December 1 to direct all Venezuelan operations of the company from a more central point.

HOYT SHERMAN, who has been assistant general manager of Mene Grande Oil Company operations in the Lake Maracaibo district, has been promoted to general manager of the Western Venezuela district.

GULF OIL CORPORATION has purchased recently from Danish American Prospecting Company a concession for rights on all minerals in Denmark. Chester Baird, now assistant chief geologist for Mene Grande Oil Company, will sail for Denmark in November to take charge of exploratory and preliminary development work.



Paul Plunkett, Louisiana boy recently was assigned to drilling duty at Jusepin, most recent wildcat strike of Standard Oil Company of Venezuela in Eastern Venezuela. It is Paul's second hitch down south, he having returned from several months stay in the United States where he was recuperating from concussion of the skull. His big brother, Bill (at right) says the next time someone tells Paul to look out for a recalcitrant brake lever Paul probably will listen. Bill, incidentally, is drilling at Aceital, another wildcat location in Eastern Venezuela.

Siro Vasquez, resident petroleum engineer for Standard Oil Company of Venezuela at Quiriquire, standing on the concrete floor of Well No. 63.

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MEN IN THE INDUSTRY'S NEWS

E. P. HUBBARD has been named chairman of the program committee for the Southwest District of the American Petroleum Institute Division of Program. Members of the committee are: R. S. Dewey, Humble Oil & Refining Company, Midland, Texas; T. W. Johnson, United Gas Company, Shreveport, La.; R. H. McLemore, Sun Oil Company, Beeville, Texas; L. A. Ogden, Pure Oil Company, Fort Worth; P. D. Torrey, Sloan & Zook Company, Houston; and J. E. Warren, Carl B. King Drilling Company, Dallas.

ANDY J. BALCOM, superintendent of the of the telegraph and telephone department of the Magnolia Pipe Line Company, has returned to Dallas headquarters after spending several weeks in the Lake Centralia district, Illinois, supervising the installation of a telephone system for the Magnolia Petroleum Company.

F. G. WHITE, district foreman for Magnolia Pipe Line Company in North Louisiana, has been transferred from Shreveport to Salem, Illinois, to become superintendent of a crude gathering system being installed by the Magnolia Petroleum Company in the Lake Centralia field.

MELVIN M. GARRETT, Dallas consulting geologist, was guest speaker at the November 1 meeting of the Dallas Petroleum Geologists. He reviewed the history of Strawn development in West Central and North Texas, placing an estimate on oil recovery from this horizon to date at approximately 62,000,000 barrels. The ultimate yield from established fields will probably pass the 225,000,000-barrel level, he added, while this figure may be doubled by future strikes. The accumulation of oil in the Strawn is due to stratigraphic rather than structural conditions, and for this reason discoveries are more difficult, according to Garrett.

W. TROUT, C. A. Baldwin and C. C. Farthing last week organized the Southern Illinois Refining Company of Centralia.

E. T. NOBLE, Okmulgee operator, has been named general chairman of the Okmulgee community chest fund drive.

E. E. NEWPORT, Sinclair Prairie Oil Company, has been named chairman of the McPherson chapter of the American Petroleum Institute, succeeding Max Sherwood, Shell Petroleum Corporation.

D. HAROLD BYRD, member of the producing firm of Byrd & Frost, Inc., Dallas, has resigned as president of the Independent Petroleum Association of Texas. E. E. Fogelson, Dallas and Houston operator, has been nominated to succeed Byrd.

KARL G. MILLER, Oil City, was elected to the public relations committee of the Venango County Branch of the Associated Petroleum Industries of Pennsylvania last week when the organization's executive committee met to plan its winter program.

HAMMOND CHAFFETZ, former special assistant attorney general who took part in the prosecution of major oil companies at Madison, Wisconsin, last winter, has joined the law firm of Kirkland, Fleming, Green, Martin and Ellis, Chicago. Standard Oil Company of Indiana was represented by Weymouth Kirkland, of this firm, during the trial. Chaffetz announced his resignation from the department of justice shortly after the close of the trial in January.

Phil Davis, scout for the Tide Water Associated Oil Company, is shown scouting wells at Eureka field, Harris County, where the company has producing acreage

W. G. SKELLY, president of Skelly Oil Company, last week was proposed as chairman of the Republic national committee. Speaking before the American Constitution Club at Tulsa, William E. Porter, former president of the Anti-New Deal Democrats of Kentucky, declared: "What I have heard about Skelly makes me think he is the logical man to take over the Republican party and instill in it the pep and enthusiasm of youth and the experience of maturity."

HARVEY B. WHITAKER, formerly in charge of the San Antonio office of Bridwell Oil Company, has been transferred to Mattoon, Illinois.

COL. J. FRANK DRAKE, president of Gulf Oil Corporation, Pittsburgh, was in Memphis last week while on a tour of the company's southern properties. He planned to go to Mississippi and New Orleans before returning to Pittsburgh.

ALF M. LANDON was in Wichita, Kansas, last week on a matter having to do with his oil business, and stayed over at the home of Ralph J. Pryor, Wichita oil man. The former Kansas governor and Republican party standard bearer refused to comment on political questions.

R. L. "REX" DAWSON, general manager in the Illinois district for Carter Oil Company, is making satisfactory recovery from an illness in a Springfield hospital.

FLOYD K. BEACH, engineer in the Alberta department of lands and mines, has been transferred to Calgary and will make his headquarters in the offices of the Alberta Gas & Oil Conservation Board.

MAX PRAY, operator active for the past year in Illinois fields, was receiving the sympathies of his friends last week on the death of his wife, who was instantly killed when the car which she was driving collided head-on with a truck near Breese, Illinois.

FRANK NEELY, vice president in charge of production for Superior Oil Corporation, Tulsa, was called to Hays, Kansas, last week by the serious illness of his brother, W. R. Neely, superintendent for the company at Hays.

E. S. PORTER, vice president of Amerada Petroleum Corporation, returned to Tulsa last week from a business trip to New York City.

JOSEPH HARTMEN, president of the Imperial Oil Company, Pittsburgh, is visiting company operations in Illinois.

E. W. WILLIAMSON, who retired November 1 as manager of the Peoples Natural Gas Company, was honored at a dinner meeting held in Pittsburgh last week. Among those attending were R. W. Gallagher, vice president, and William A. Dougherty, attorney, of Standard Oil Company of New Jersey; Frank Lerch, Jr., president of the Natural Gas Companies, Inc., and J. B. Tonkin, former

president, and R. D. Beardsley, former treasurer, of the Peoples Natural Gas Company. S. E. W. Burnside, secretary of the Peoples company, presided.

RICHARD STEINHORST, formerly in the production department of The Texas Company at Sapulpa, Okla., has been transferred to Wichita, Kansas, as petroleum engineer.

THOMAS W. LEACH, with Mrs. Leach, left Minot, North Dakota, last week for Billings, Montana, and Denver Colorado, before going to their home at Tulsa for the winter. Leach has been engaged in geological exploratory work in northwestern North Dakota in connection with The California Company's activity in the region.

CHARLIE McGAHA of Wichita Falls, Texas, president of the Texas Mid-Continent Oil and Gas Association, was in Houston last week.

C. P. PARSONS, Halliburton Oil Well Cementing Company, was the principal speaker at the Houston Geological Society's weekly meeting at 910 Texas Avenue, November 3. His subject was "Squeezing Cement Into Permeable Formations".

CECIL L. CHATMAN, West Texas district geologist for Humble Oil & Refining Company with headquarters at Wink, died October 25 at the home of his parents at Shawnee, Oklahoma. He was stricken several months ago, and responded favorably to treatments at a Rochester, Minn., hospital, but suffered a relapse upon his return last week. His 15 years of service with Humble Oil & Refining Company was spent mostly in West Texas.

WILLIAM BREWSTER, Magnolia Petroleum Company scout at Mattoon, Illinois, has been transferred to Owensboro, Kentucky.

These former Oklahoma and Kansas boys are members of the day time drilling crew of Parker Drilling Company, which is using the first 122-foot rotary derrick in Michigan, and which probably will establish a new depth record for rotary drilling in the area. Left to right: Perry E. Davis, driller and in charge of operations in Michigan for Parker Drilling Company; Fred Boston, derrick man; C. H. Martin, motorman; and Lester Bush and E. M. Solters, roustabouts.

GUY H. WOODWARD, assistant general counsel for Stanolind Oil & Gas Company, Tulsa, and S. H. Glassmire, attorney, will be speakers at a series of oil and gas classes being held in Tulsa.

J. H. ABERNATHY, Sunray Oil Company engineer, has returned to Tulsa after a trip to San Antonio and vicinity.

FLOYD L. SWINDELL, representative with Texas Steel Company in the upper Mid-Continent, is recovering from an emergency appendectomy at Siloam Springs, Arkansas.

W. R. CURRY, Oklahoma City operator, is opening offices in Salem, Illinois, from which he will direct his activities in that area.

SAMUEL CHASE WILSON, independent petroleum geologist of Memphis, Tennessee, has accepted the position of chief geologist with Singer Manufacturing Company in connection with the drilling of several wells for them in Northeast Louisiana by Continental Oil Company.

DIED:

J. S. HOUCK, 63, died October 26 of a heart attack while directing workers 13 miles southeast of Miami, Oklahoma. Houck resided in Fairland, Oklahoma.

JOHN GILMORE, 26, oil field worker, died October 27 of injuries suffered when a casing joint struck him in the head while working in the Lance Creek field of Wyoming.

E. J. STUMP, 48, veteran North Texas oil producer, died October 31 at a Wichita Falls hospital. Survivors include two sons, Orville Stump, Monohans, and E. J. Stump, Jr., Childress, Texas.

GROVER C. REED, 54, superintendent of the telephone and telegraph department of the Lone Star Gas Company, died November 1 in a Fort Worth hospital from injuries sustained the day before in an automobile accident while en route to his home at Bowie, Texas. He entered the company's service in 1909, and supervised the construction of its communication system.

D. L. LEWIS, 50, oil well cementing contractor, died October 28 of injuries suffered when his automobile turned over 8 miles south of Lockhart, Texas. Surviving are his wife, one son and four daughters.

LAWRENCE A. BAKER, 81, who was retired by the National Transit Company after 40 years service in Pennsylvania fields, died October 31 in an Oil City hospital. A resident of Shippenville since 1890, he was widely known throughout the oil district.

FRANK SPARHAWK, engaged in oil exploration in Wisconsin for several years, died October 29 in a hospital at Green Bay, Wisconsin. He was 75. Sparhawk made two unsuccessful tests in Columbia county and was engaged in leasing property in the vicinity of Green Bay preparatory to a test when he became ill three weeks ago.

THE WEEK'S NEWS SUMMARIZED

Markets

The industry's markets have steadied appreciably following the recent crude price reductions. Prices were generally unchanged during the past week. No further readjustments of crude postings occurred. Gasoline last week was being offered less freely in the Mid-Continent, and there were only slight alterations in tank car quotations, which in some instances were upward and others downward.

Giving encouragement to the market outlook was the assurance that crude production would remain curtailed to a low level during November. Meanwhile, the statistical position of the industry improved further to lend additional assistance.

Charles F. Roeser, president of of the Independent Petroleum Association of America, last week declared Standard Oil Company's (New Jersey) explanation of the causes and factors resulting in the recent crude price cuts was misleading and "an excuse and not a reason."

Standard placed the blame on heavy stocks, high runs to stills by refiners, and discovery of flush production in Illinois, Arkansas and Louisiana. Standard suggested a four-point remedial policy of (1) conservative runs to stills, (2) elimination of crude stock withdrawals, at least during low consumption periods, (3) less development in flush fields, and (4) all states become members of the Interstate Compact and enact conservation laws.

Roeser charged the statement with being misleading because it took in the Pacific Coast area stocks.

Statistics

Continued favorable conditions in the industry were reflected by improvement in the statistical position. Crude production was 10.1 percent below the level of the corresponding week a year ago, while crude runs to stills were 5.9 percent less.

This permitted gasoline stocks to be reduced approximately 100,000 barrels, and brought to a level just 1.1 percent above the corresponding time of 1937, which is the nearest they have been to the preceding year. This had a stabilizing effect on the gasoline market. Crude stocks were further reduced, and now are 9.8 percent lower than a year ago, and at a 16-year low.

However, fuel oil inventories continued to increase, rising to another all-time peak of 153,719,000 barrels, where they are 26.9 percent larger than one year previously.

Allowables

The industry's outlook is promising from the standpoint of crude production curtailment. November allowables in leading states are generally below the indicated market demand estimate of the Bureau of Mines. The six foremost states have fixed allowables that in the aggregate are 203,447 barrels daily or 6.7 percent under demand calculations. This indicates that the industry should be able to make further withdrawals from both gasoline and crude stocks. The November allowables are even more strict than those in force during October, when the six leading states had allowables 176,808 barrels, or 5.8 percent, below the Bureau's estimate of demand.

Legislation

Secretary of the Interior Harold L. Ickes again last week expressed himself as favoring federal control of the petroleum industry, although admitting he is not at present prepared to recommend such legislation to Congress. Ickes criticized the Connally act and the Interstate Compact for their lack of "more teeth." Particularly did he urge some means of making the Interstate Compact effective before it is expanded to include the refinery branch.

News Section Index

General News ..... 59 to 70

Allowable Picture 60
Oil at the Capitols..... 60
Oil in Courts..... 70
Pipe Line News..... 69
Market Situation 62
Crude Production 68

World Developments 51

Field Development News..... 71 to 93

Arkansas 83
California 84
Eastern States 86
Illinois 85
Kansas 73
Louisiana Coast 81
North Louisiana 82
Michigan 87
New Mexico 88
Oklahoma 72
East Texas 78
Texas Gulf Coast..... 80
North Texas 77
Panhandle Texas 77
Southwest Texas 79
West Texas 74
Rocky Mountains 89
Wildcat Drilling Report.....90

Oil at the Capitols

Ickes reaffirms stand on need for federal oil control in enforceable form . . . Japanese oil monopoly in China draws United States protest

Ickes still favors federal oil control

National defense needs as well as the interests of conservation justify federal control of the petroleum industry, it was declared last week by Secretary of the Interior Harold L. Ickes, who added, however, that he is not at present prepared to recommend such legislation to Congress.

Discussing the oil situation with newspapermen November 3, the secretary sharply criticized the Connally act, asserting that since it is not a federal law it cannot be amended to give it "more teeth" and that the Interstate Compact which it authorizes cannot be enforced any more "than you can make the articles of confederation under which we tried to operate prior to the constitution enforceable.

Wants Compact Enforceable

"It is an agreement between states, a gentlemen's agreement that they will do certain things, and if one state is not going to be a gentleman any more, no one can make him one," he added.

Some states, he pointed out, are not in the compact and, he held, it does not help the oil situation for only a few of the producing states to get together on an agreement.

Asked what real good is the compact, the secretary declared "that is the question I am asking. That is the reason I say they ought to make the compact effective as to the subject matter it now covers before they try to expand it." This, he said, should come before any effort is made to expand the compact to include the refinery branch.

Secretary Ickes indicated that he might intervene in the situation when Congress' next session takes up legislation to extend the compact, but said he did not know whether there should be federal regulation by amendment of the Connally act or whether there ought to be a new bill passed.

Believes Regulation Needed

"I think the United States Government has been remiss for a long time in not having passed a necessary regulation act which would stop the waste in our oil production and conserve our oil for the use of future generations," he declared. Now it is particularly true in view of the feeling that we have to give more regard to the national defense than we have ever before had to give."

The secretary indicated that he still had faith in the federal control legislation which he urged four years ago when the compact bill was first suggested, but refused to discuss that measure in detail because, he said, he did not have the details "fresh enough" in his mind.

U. S. protest Japanese oil monopoly in China

Settlement of the controversy between American oil companies and the Manchurian authorities resulting from the establishment of an oil monopoly in Manuchuria by Japanese enterprise is one of the aims of the state department in a strong note sent to Japan October 6, calling for maintenance of the "open door" policy in China, it was disclosed in Washington last week.

In that note, which has neither been published in Japan nor replied to by the Japanese government and the sending of which was disclosed in Washington only on October 27, the state department called upon the Tokyo government to refrain from discriminating against American interests in China in favor of its own nationals.

Specifically, Japan was asked to discontinue discriminatory exchange control which operates adversely to American trade; to abandon any monopoly or preference which would deprive Americans of the right to undertake legitimate trade or industry in China, and to halt interference with American property and other rights.

The current invasion of China, like the preceding conquests of Manchuria and other Chinese areas, has as its motive the domination by Japanese industry of the trade and commerce of the country, it is said. American enterprise already has been practically excluded from the areas under Japanese control, the oil industry being one of the major activities which the Japanese are most desirous of monopolizing.

Allowable Picture

Stricter crude production likely as six leading states adopt allowables that aggregate 203,447 barrels under Bureau of Mines demand estimates

November allowables under market demand

The industry's outlook is promising in so far as the scheduled curtailment of crude oil production is concerned.

November allowables in the leading producing states are generally below the indicated market demand, the six foremost states in the aggregate being 203,447 barrels daily or 6.7 percent under the requirements.

This indicates that actual production and probably crude runs at refineries will be well in line with market needs and that the industry may be able to make further withdrawals from stocks of crude oil and gasoline.

For such a result was achieved in October under even less strict allowables. In that month the six leading states had allowables 176,808 barrels daily or 5.8 percent under the Bureau of Mines estimate of demand.

Texas, Oklahoma, and Louisiana adopted November allowables from 6 to 17 percent under the indicated demand, while the other leading states were a little nearer to the demand estimates, as indicated in the accompanying table.

November Allowables Under Bureau of Mines Estimate of Demand for Domestic Crude

STATE	Bureau of Mines Forecast of Demand	State Allowable Beginning of Month	Excess or Deficiency of State Allowable	Percent Excess or Deficiency
California	*616,700	*615,000	— 1,700	— 0.3
Kansas	164,300	164,300	.....	.....
Louisiana	256,300	235,500	—20,800	— 8.1
New Mexico	111,000	108,400	— 2,600	— 2.3
Oklahoma	515,000	428,000	—87,000	— 16.9
Texas	1,371,000	†1,279,653	—91,347	— 6.6
Total Six States	3,034,300	2,830,853	—203,447	— 6.7
Other States	357,000	.....	.....	.....
Total United States	3,391,300	.....	.....	.....

* Recommendation of Central Committee of California Oil Producers.
† Average daily production permitted for 7 day week as a whole; actual daily allowable higher, but fields shut-in on Saturdays and Sundays.

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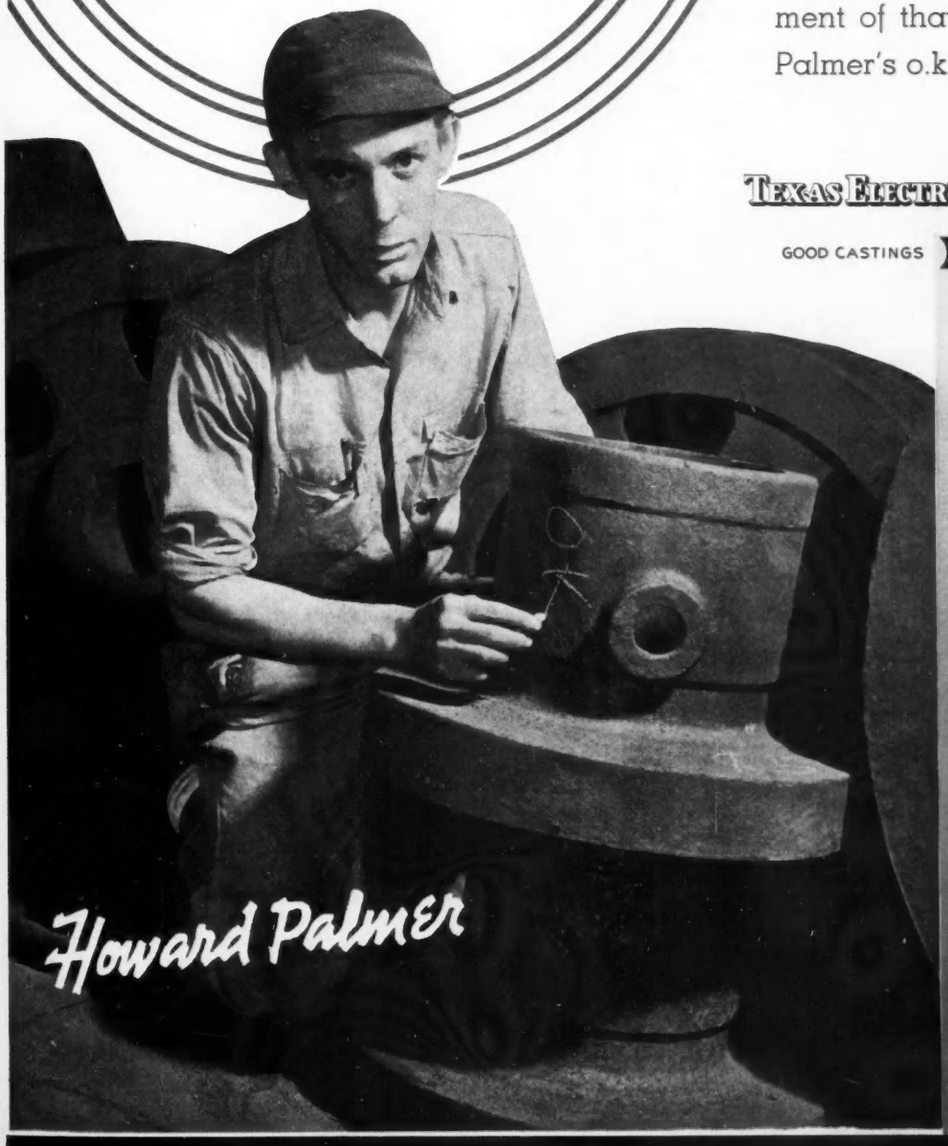

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Market Situation

Prices steadier as less gasoline offered . . . Stocks reduced further . . . Independent's head calls Standard's explanation of cuts an "excuse"

Markets now generally in stable condition

The oil industry's markets have appreciably steadied following the recent crude price reductions, and the prices of both crude oil and refined products now appear generally firm.

Gasoline last week was being offered less freely in the Mid-Continent, and deliveries under contracts were moderately heavy.

Kerosene and light fuel oils were in comparatively light demand temporarily, because warm weather was lingering.

Giving encouragement over the market outlook was the assurance that crude oil production would remain strictly curtailed during November, the leading producing states having adopted low allowables.

Meanwhile, the basic conditions in the industry, as reflected by the latest weekly statistics, were generally satisfactory. Crude oil production held materially under prevailing market demand, and refinery runs were relatively low, having been reduced from the previous week's rate.

With the plant activity held down, gasoline production again was sufficiently low to permit further withdrawals of that product from storage.

Fuel oil stocks continued to increase seasonally, and reached a new all-time peak, but the addition was smaller than in the corresponding week last year.

Because of the relatively low production of crude oil, stocks of crude were further reduced in the week ended October 22, having been brought down to a new 16-year low of 276,652,000 barrels. Those stocks then were 9.8 percent lower than at the corresponding time last year.

Sohio reduces takings from Illinois wells

The Sohio Corporation, subsidiary of Standard Oil Company of Ohio and a major purchaser of crude in the Illinois basin, last week further curtailed its take from wells in new Illinois pools. A sluggish oil market was blamed for the action.

Purchases in the Centralia pool were limited to 25 barrels a well, instead of most of the field's entire production which in recent weeks has averaged 31 barrels per well a day. The take in the Lake Centralia-Salem field was reduced from 75 to 50 barrels per well a day; purchases in the Beecher City pool to 40 barrels a well a day, and purchases in the Clay City, Noble, Olney, Flora and Fairfield areas from 100 to 75 barrels a well.

Meanwhile, operators in the Lake Centralia-Salem pool are cooperating in an effort to find a market. Several independents have under consideration a proposal to build a gathering system to facilitate sales to out-of-town refineries.

Purchases by other companies were not changed: Carter Oil Company is taking 40 barrels per day per 10 acre location in Fayette County, and The Texas Company was continuing purchases of 75 barrels per day in the Lake Centralia field. The Wabash Pipe Line Company is a carrier rather than a purchaser and handles chiefly the production of The Pure Oil Company.

Oklahoma-Kansas Troubles

Despite the low allowables in effect in November, the crude oil market remains soft locally in certain areas, particularly in Oklahoma and Kansas.

Globe Oil & Refining Company last week announced that it would on November 10 discontinue buying about 5000 barrels daily of Oklahoma City oil, and about 1000 barrels daily of northern Oklahoma crude. Following that announcement, the Oklahoma Corporation Commission's conservation officer was seeking markets for those oils. The oil from Oklahoma City had been piped to the Globe company's Lemont, Illinois, refinery, and it was believed that Illinois crude was gradually displacing the Oklahoma oil. The oil from northern Oklahoma has been going to the Globe company's Blackwell, Oklahoma, refinery, but when that plant was shut down the oil was gathered and resold to other purchasers, the company having obtained a gathering charge of 15 cents a barrel.

The Kansas Corporation Commission will hold a hearing November 18 regarding the recent announcement by Sinclair-Prairie Oil Marketing Company that it would discontinue purchases from certain leases in southeastern Kansas. The commission scheduled the hearing after receiving a complaint from the Montgomery County (Kansas) Independent Producers' Association. The commission subsequently ordered the Sinclair company to continue purchases in the area until the hearing.

A plan is scheduled to go into effect as soon as contracts are signed under which relief will be provided for stripper well producers in certain parts of Osage and Tulsa counties, Oklahoma. The plan calls for storage of the crude by Barnsdall Refining Corporation at its refinery at Barnsdall, Oklahoma, at 1-cent a barrel per month plus the gathering charge of 12 cents a barrel. The company, on reopening its Barnsdall plant, will purchase the stored oil on the basis of Standard Oil Company of Indiana's Oklahoma posted prices. Previously, the Osage Tribal Council had rejected a plan that called for purchase of the oil at 5 to 10 cents a barrel less than the Standard of Indiana's prevailing Oklahoma postings.

Nothing has been done toward giving relief to the approximately 600 wells in the East Texas field that are without market.

The K-M-A field, of North Texas, still is under pipe line proration, although such restriction has not been tightened. Magnolia Petroleum Company is taking 80 percent of the allowables of wells to which it is connected, and Sinclair is taking 65 percent.

Standard Explains Recent Price Cut Causes . . . Roeser Terms Explanation Misleading

Among the numerous controversies that have followed the recent crude price reductions was that last week in which Charles F. Roeser of Fort Worth, president of the Independent Petroleum Association of America, characterized as "an excuse and not a reason" the statement on the subject by Standard Oil Company (New Jersey) in its publication, *The Lamp*.

Roeser referred particularly to a portion of the Standard statement in which the price cuts were attributed in part to the fact that "over-all stocks of crude oil and products are heavy and have been increasing more than a year."

Roeser declared, however, that "the statistical statement given is misleading, in that apparently it takes in the territory west of the Rockies, that does not affect our price; for between October 1, 1937, and October 1, 1938, a total inventory of all stocks, crude and refined has been reduced approximately 20,000,000 barrels for the territory east of California, this being the only territory affected by the price change and the California statistical position not being material to this issue.

"Another fundamental weakness in this statement" declared Roeser, "is that it comes from and apparently speaks for the larger refining group, which are also, the principal purchasers, therefore, the group determining the price to be paid. This group has persisted for more than a year in excess refinery operations, increasing its stocks of refined products; however, all stocks have not been persistent in their excesses. The over-all picture includes fuel oil, of which there is an excess. This fuel oil excess has been greatly aggrevated by the enormous amounts of fuel oil imports that have been brought in by the Standard of New

CRUDE OIL PRICE SCHEDULES

(Posted October 11-13, 1938)

MID-CONTINENT GRAVITY SCALE PRICES

(Some fields of Mid-Continent have flat price postings, and are shown separately).

GRAVITY	[7]Okla.-Kans.	North La.-Ark.	North & W. Central Tex.	East Central Tex.	Gray Co. Tex.	Carson Hutchinson Co. Tex.	[1]Tomball Tex. Type	West Tex.-N. Mex.	[2]Gulf Coast (Tex.-La.)	[3]Some La. Gulf Areas	Jennings, La.	[4]Anahuac, Tex. Type	[5]Refugio, Tex. Type	[6]Mirando, Tex. Type
17–17.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18–18.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19–19.9	.....	.....	.....	.....	.....	.....	.....	*$0.53	*$0.79	*$0.79	.....	*$0.74	*$0.79	*$0.74
20–20.9	$0.60	.....	.....	.....	.....	.....	.....	.55	.82	.82	.....	.77	.82	.77
21–21.9	.63	.....	.....	.....	.....	.....	.....	.57	.85	.85	.....	.80	.85	.80
22–22.9	.66	.....	.....	.....	.....	.....	*$0.95	.59	.88	.88	.....	.83	.88	.83
23–23.9	.69	.....	.....	*$0.78	.....	.....	.97	.61	.91	.91	.....	.86	.91	.86
24–24.9	.72	*$0.73	*$0.71	.80	.....	.....	.99	.63	.94	.94	.....	.89	.94	.89
25–25.9	.75	.75	.73	.82	.....	.....	1.01	.65	.97	.97	.....	.92	.97	.92
26–26.9	.78	.77	.75	.84	.....	.....	1.03	.67	1.00	1.00	.....	.95	1.00	.95
27–27.9	.81	.79	.77	.86	.....	.....	1.05	.69	1.02	1.02	.....	.97	1.02	.97
28–28.9	.84	.81	.79	.88	*$0.72	*$0.67	1.07	.71	1.04	1.04	.....	.99	1.04	.99
29–29.9	.87	.83	.81	.90	.74	.69	1.09	.73	1.06	1.06	.....	1.01	1.06	1.01
30–30.9	.90	.85	.83	.92	.76	.71	1.11	.75	1.08	1.08	.....	1.03	1.08	1.03
31–31.9	.92	.87	.85	.94	.78	.73	1.13	.77	1.10	1.10	*$0.87	1.05	1.10	1.05
32–32.9	.94	.89	.87	.96	.80	.75	1.15	.79	1.12	1.12	.89	1.07	1.12	1.07
33–33.9	.96	.91	.89	.98	.82	.77	1.17	.81	1.14	1.14	.91	1.09	1.14	1.09
34–34.9	.98	.93	.91	1.00	.84	.79	1.19	.83	1.16	†1.16	.93	1.11	1.16	1.11
35–35.9	1.00	.95	.93	1.02	.86	.81	1.21	.85	1.18	.....	.95	1.13	1.18	1.13
36–36.9	1.02	.97	.95	1.04	.88	.83	1.23	.87	1.20	.....	.97	1.15	1.20	1.15
37–37.9	1.04	.99	.97	1.06	.90	.85	1.25	.89	1.22	.....	.99	1.17	1.22	1.17
38–38.9	1.06	1.01	.99	1.08	.92	.87	1.27	.91	1.24	.....	1.01	1.19	1.24	1.19
39–39.9	1.08	1.03	1.01	1.10	.94	89	1.29	.93	1.26	.....	1.03	1.21	1.26	1.21
40 and above	1.10	1.05	.....	1.12	.....	.....	.....	.95	1.28	.....	1.05	.....	.....	.....
40–40.9	.....	.....	.....	1.03	.....	.96	.91	1.31	.....	.....	.....	.....	1.23	1.28	1.23
41–41.9	.....	.....	.....	1.05	.....	.98	.93	1.33	.....	.....	.....	.....	1.25	1.30	1.25
42–42.9	.....	.....	.....	1.07	.....	1.00	.95	1.35	.....	.....	.....	.....	1.27	1.32	1.27
43–43.9	.....	.....	.....	1.09	.....	1.02	.97	1.37	.....	.....	.....	.....	1.29	1.34	1.29
44–44.9	.....	.....	.....	1.11	.....	1.04	.99	1.39	.....	.....	.....	.....	1.31	1.36	1.31
45 and above	.....	.....	.....	1.13	.....	1.06	1.01	1.41	.....	.....	.....	.....	1.33	1.38	1.33

*Minimum price and applies also to purchases of lower gravity.

†Maximum price and applies also to purchases of higher gravity.

[1] Tomball, Raccoon Bend (Deep Sand) and Satsuma.

[2] Includes Goose Creek, Sugarland, West Columbia, Thompsons, Mykawa, Amelia, Webster, and Clear Lake fields.

[3] Includes Berwick, Bay St. Elaine, Caillou Island, Dog Lake, Four Isle, Gillis, Horseshoe Bayou, Iberia, Jefferson Island, Lake Barre, Lake Pelto, Leesville and Port Barre fields.

[4] Anahuac, Dickinson, Gillock, Cedar Point, Fairbanks, Turtle Bay, Hull, Liberty, Orange, Pierce Junction, Barbers Hill and Raccoon Bend (shallow sand) fields.

[5] Includes Saxet, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor fields.

[6] Includes Duval, Jim Hogg, Jim Wells, Webb and Zapata counties, Texas, and Heyser and Placedo fields.

[7] Oklahoma Pipe Line (Carter Oil) and Magnolia schedules.

Mid-Continent Flat Prices

	Flat Price	Date Posted
Arkansas:		
Smackover	$0.73	10–12–38
Louisiana:		
Garden Island	1.24	10–12–38
Gibson	1.04	10–11–38
Lafitte	1.04	10–12–38
Texas:		
East Texas	1.10	10–12–38
Talco	.55	10–12–38
Livingston, Cleveland	1.10	10–12–38
Van	.93	10–12–38
Pettus	1.29	10–12–38
Pecos County	.78	10–12–38
Pecos Shallow	.65	10–12–38
Luling	.87	10–12–38
Lytton Springs	.99	10–12–38
Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski	.96	10–11–38
Flour Bluff	1.27	10–11–38
Seabreeze, Willow Slough, La Belle, Hardin	1.00	10–13–38
Clay Creek	.85	10–13–38
Conroe	1.27	10–11–38
Cayuga	.81	10–19–38
Long Lake	1.08	10–19–38

Middle West Prices

Lima, Ohio	$0.90	10–13–38
Illinois	1.05	10–13–38
Illinois Basin	1.15	10–13–38
Centralia, Illinois	1.15	10–13–38
Princeton, Indiana	1.05	10–13–38
Western Kentucky	1.10	10–13–38
Kentucky River, Eastern Kentucky	1.40	7– 1–38
Big Sandy River, Eastern Kentucky	1.32	7– 1–38

Michigan Prices

	Flat Price	Date Posted
Porter, Greendale, Crystal	$0.92½	10–13–38
Buckeye, Bentley, Edenville and Beaverton	.90	10–13–38
Freeman	.87	10–13–38
West Branch and Arenac	.74	10–13–38

Rocky Mountain States Prices

Colorado:		
Cannon City and Florence	.90	10–11–38
Iles, Light	.98	10–11–38
Iles, Heavy	.92	10–11–38
Montana:		
Cat Creek	1.30	1– 1–38
Cut Bank	1.35	6– 3–36
Pondera	1.05	9–29–33
Sunburst	.90	11–16–37
Dry Creek	.92	10–11–38
New Mexico:		
Artesia	.77	10–11–38
Wyoming:		
Big Muddy	.98	10–11–38
Elk Basin	.90	10–11–38
Frannie, Light	.55	10–11–38
Frannie, Heavy	.42	10–11–38
Grass Creek, Light	.90	10–11–38
Grass Creek, Heavy	.40	10–11–38
Hamilton Dome	.35	10–11–38
Lance Creek	.77	10–11–38
Rock Creek	1.00	10–11–38
Tensleep	.646	10–11–38
Salt Creek, Dalton Creek, Midway: Oklahoma gravity scale	....	10–11–38

Pennsylvania Prices

	Flat Price	Date Posted
Bradford-Allegheny	$1.68	9– 1–38
National Transit Lines	1.68	9– 1–38
Sw. Pa. Pipe Line	1.34	9– 1–38
Eureka Pipe Line	1.28	9– 1–38
Buckeye Pipe Line	1.18	9– 1–38
Corning Grade, Ohio	.97	10–18–38

Major Price Changes

	Penna. (Nat. Tr.)	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
Aug. 11, 1933	Up 10	.....	.....
Aug. 24, 1933	.....	Up 10	.....
Aug. 30, 1933	Up 15	.....	.....
Sept. 6, 1933	Up 10	Up 10	Up 15
Sept. 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
Nov. 6, 1934	Cut 25	.....	.....
Dec. 6, 1934	Cut 25	.....	.....
Jan. 4, 1935	Up 15	.....	.....
Feb. 4, 1935	Up 15	.....	.....
Mav 16, 1935	Cut 15	.....	.....
Jt 26, 1935	Cut 15	.....	.....
Jul 16, 1935	Cut 10	.....	.....
Aug. 29, 1935	.....	.....	Cut *1
Sept. 6, 1935	Up 5	.....	.....
Oct. 29, 1935	Up 15	.....	.....
Nov. 1, 1935	.....	.....	Up *28
Nov. 18, 1935	Up 15	.....	.....
Dec. 6, 1935	.....	.....	Up *9
Jan. 9, 1936	.....	Up 10	.....
Jan. 13, 1936	Up 15	.....	.....
Feb 26, 1936	.....	.....	Up †5
Dec. 28, 1936	Up 12	.....	.....
Jan. 28, 1937	.....	Up 12	.....
Feb. 24, 1937	Up 10	.....	.....
June 7, 1937	Up 15	.....	.....
Sept. 1, 1937	Cut 22	.....	.....
Oct. 12, 1937	Cut 25	.....	.....
Dec. 1, 1937	Cut 15	.....	.....
March 7, 1938	Cut 17	.....	.....
June 13, 1938	Cut 25	.....	.....
Sept. 1, 1938	Cut 12	.....	.....
Oct. 11, 1938	.....	Cut 20	.....

* Signal Hill 26 gravity.
† Seal Beach 26 gravity.

Crude Production Taxes

Oklahoma—Five percent of gross value less royalty interests.
Texas—2¾ cents or 2¾ percent, whichever is higher.
Louisiana—From four to 11 cents a barrel, depending upon gravity.
Arkansas—2.6 percent of gross market values.
Montana—Two percent of gross value at well and 3/8 of 1c per barrel.
New Mexico—Severance tax of 2 percent on oil and gas.
Wyoming and New Mexico—Production tax based upon state and county assessments.
California—.66443 mills per barrel of oil produced and 17.39 cents an acre on proved lands.

Jersey and other importers for whom they seem to speak. It would seem that those initiating the price cut seek to be the beneficiaries of their own wrongdoing."

Standard's Statement

Over its article in *The Lamp,* the Standard Oil Company (New Jersey) carried the following head: "Cause and Effect of Crude Prices," and this subhead: "Factors Influencing Recent Adjustment Began to Take Shape Early in 1937; A Four Point Suggested Program." The article itself is herewith reproduced:

"A study of the movement of crude oil and products since the middle of 1937 reveals the fundamental cause for the recent drop in crude oil prices to have been a moderate but persistent excess of supply over demand.

"Overall stocks of crude oil and products are heavy and have been increasing for more than a year, despite the fact that crude stocks themselves have been reduced. Early in 1937 the demand had declined alarmingly. Prices were forced downward and stocks of products began to pile up. Clearly, industry generally faced a period of slack operation and no thoughtful observer could have failed to recognize the fact.

"Notwithstanding these warnings, refiners continued through last winter to run more than the seasonal volume of crude. As the new year advanced the high price of crude in relation to the price of products prompted or forced them to draw on crude stocks rather than to purchase crude at the posted prices.

"Withdrawals from storage mounted gradually until they reached a peak of 150,000 barrels a day. By the first of April unprecedented stocks of gasoline had accumulated, making inevitable depressed gasoline prices throughout the summer period of high consumption, even if the most optimistic estimates of increased demand were realized. But as it turned out, demand for gasoline failed to show the usual increase and prices declined even further than might have been anticipated from a consideration of the heavy inventories alone. Refiners generally were reduced to operating at a loss or at least on a no-profit basis.

"To aggravate this already distressing situation, an increasing volume of crude oil began to force itself onto the market at cut prices. Prolific sources of new supply had been developed. In Illinois, squarely across the established route to market for Kansas and Oklahoma crude, flush new fields began to sell their output at from 10 to 20 cents below a parity with Mid-Continent posted prices. This movement started as far back as the middle of 1937; it has continued and expanded steadily since.

"Similarly, in Arkansas important new fields began to ship their output into Texas at from 15 to 25 cents below regular prices. Kansas producers, also with new fields, were driven to reduce their crude prices. Michigan oil regularly moved to market at below-parity prices. Certain fields in northern Louisiana cut prices, then southern Louisiana, and finally scattered fields and purchasers in Texas, suffering from imports of low-priced crude from Arkansas, were driven to reduce their schedules.

"All these local price reductions had been made before the major purchasers took action. Some 200,000 barrels of crude were going to market daily at from 10 to 25 cents below regular posted prices before the major purchasers finally met the lower price schedules of the competitors and the crude oil price cut became general.

"It cannot be maintained that any one factor is wholly to blame for the industry's predicament, nor that any one purchaser initiated the price cut. Excessive refinery runs was one cause, to be sure, but heavy withdrawals from crude oil stocks and the pressure of flush oil from new fields were contributing causes. The price cuts, at first sporadic and widely separated over the producing areas, simply spread until they became general. In other words, the crude oil price structure just slowly disintegrated.

"Resentment at price cuts is inevitable and natural. It is even understandable. The recent price cuts have been loudly denounced as a "blow below the belt" because they were made in the face of curtailment of production by proration authorities in the large producing states, so drastic as actually to have reduced crude oil stocks.

"This viewpoint seems to overlook the fact that balance must be maintained between the supply and demand of products as well as of crude. Price is still the most potent factor in bringing about a balanced supply-demand relationship. It is not the function of State conservation authorities, nor of the Interstate Compact, to curtail production for the purpose of maintaining prices. Proration is concerned only with the prevention of physical waste in the interest of the consuming public, and with the maintenance of equity between competing producers. Prices are still free and must continue to be free to seek their own level, without reference to conservation efforts.

"It would be useful to consider the problem of extricating the industry from the dilemma in which it now finds itself, with product prices so low as to threaten all profits in both producing and refining. Remedial policies should include:

"1. A conservative program of runs to stills, avoiding so far as possible any excess of stocks.

"2. The elimination, at least over the approaching season of low consumption, of heavy withdrawals from crude stocks—although it is, of course, true that the reduction of excessive stocks, generally speaking, makes for industrial stability. The recent nationwide survey by the Bureau of Mines for crude oil stocks showed them still to be above the best practical level.

"3. Less insistent development of new flush oil fields. Rates of production in some of these new fields are certainly so high as to cause physical waste, and conservation measures to stop such waste should promptly be adopted and enforced. The new producing fields in Illinois constitute a case in point. Surely it behooves every producer in Illinois to support vigorously the effort to secure sound conservation laws for that state.

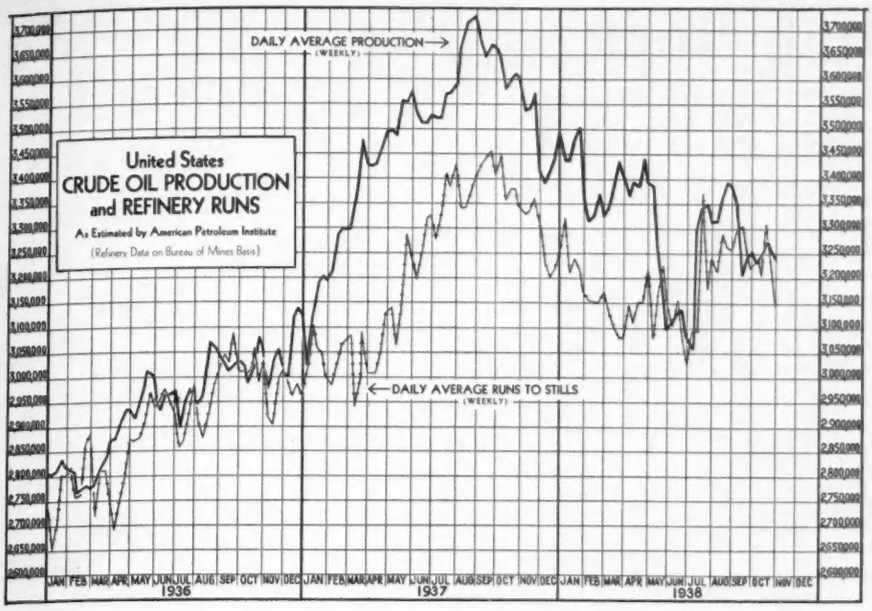
"4. Most important, states producing flush oil which are not already members of the Interstate Compact, such as Illinois, Louisiana, Arkansas, Michigan, and California, should promptly become members. Some of these states still lack conservation laws and must enact such laws before they can enter the Compact.

"The statistical position is not so serious nor so far out of balance but that the petroleum industry can be restored to a profit basis, if only a conservative operating program is adopted and adhered to by producers and refiners alike during the year 1939."

CALIFORNIA CRUDE OIL PRICES

(Posted February 26, 1936; except El Segundo and Wilmington, posted October 15, 1937, and Greeley and Canal posted July, 1938). All gravity above those quoted take highest prices of that field.

Gravity	El Segundo & Signal Hill	Seal Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canyon	Athens Rosecrans	Torrance	Richfield	Whittier East Coyote La Habra	Montebello	West Coyote Hills	Santa Springs	New Hall McKittrick Kern River Round Mountain	Greeley, Canal	Mountain view	Midway-Sunset Buena Vista Hills Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Wilmington
14-14.9	$.80	$.79	$.78	$.79	$ 80	$.76	....	$ 80	$.76	$.76	$.77	$.78	....	$.70	....	....	$ 70	$ 70	$ 70	....	$ 78
15-15.9	.80	.79	.78	.79	.80	.76	....	.80	.76	.76	.77	.78	....	.70	....	....	.70	.70	.70	....	.78
16-16.9	.80	.79	.78	.79	.80	.76	....	.80	.76	.76	.77	.78	....	.70	....	....	.70	.70	.70	....	.78
17-17.9	.80	.79	.78	.81	.80	.76	....	.80	.76	.76	.77	.78	....	.70	....	....	.70	.70	.70	....	.77
18-18.9	.80	.79	.78	.84	.80	.78	....	.82	.76	.76	.77	.78	....	.70	....	....	.70	.70	.70	....	.79
19-19.9	.82	.79	.82	.87	.84	.81	....	.85	.76	.78	.77	.78	....	.70	....	$ 70	.74	.74	.71	$ 70	.82
20-20.9	.85	.79	.85	.90	.88	.84	....	.88	.78	.82	.77	.80	....	....	....	.70	.78	.78	.72	.70	.85
21-21.9	.88	.79	.89	.93	.93	.88	....	.91	.80	.85	.77	.84	$ 78	....	....	.73	.82	.82	.74	.70	.88
22-22.9	.92	.82	.92	.96	.98	.92	....	.93	.84	.89	.79	.88	.78	....	....	.77	.87	.86	.78	.72	.92
23-23.9	.95	.86	.96	.99	1.02	.96	$ 84	.96	.88	.93	.82	.92	.78	....	....	.80	.92	.90	.82	.76	.95
24-24.9	.99	.91	1.00	1.02	1.06	.99	.88	.99	.91	.96	.85	.96	.82	....	....	.84	.97	.94	.86	.79	.99
25-25.9	1.03	.95	1.03	1.05	1.11	1.03	.93	1.02	.95	....	.89	.99	.86	....	....	.88	1.01	.98	.90	.83	1.03
26-26.9	1.06	1.00	1.07	1.09	1.16	1.06	.98	1 05	.98	....	.92	1.03	.90	Elwood Terrace	....	.91	1.06	1 02	....	....	1.06
27-27.9	1.10	1.05	1.11	1.12	....	1.10	1.03	....	1.02	....	.96	1.06	.95		$ 91	.95	1.10	1.06	....	....	1.10
28-28.9	1.14	1.10	1.14	1.15	....	1 14	1 07	....	1.06	....	.99	1.10	.99		.94	.99	1.15	1 10	....	....	1.14
29-29.9	1.17	1.15	1.18	1.18	F.O.B.	1.17	1 12	....	1.09	....	1.03	1.14	1.03	....	98	1 02	1 20	1.14	....	....	1 17
30-30.9	1.21	1.19	1.22	1.21	Pipe	1.21	1 17	....	....	....	1.07	1.17	1.08	F.O.B.	1 02	1.06	1 25	1.18	....	....	1 21
31-31.9	....	....	....	1.24	Line	1.24	1 22	Kettleman Hills			1.11	1.21	1.12	Ship	1.06	1.09	1 29	....	....	....	....
32-32.9	....	....	....	1.27	....	1.27	1 27				1.14	1.25	1.16		1.09	1.13	1.34	....	....	....	....
33-33.9	....	....	....	....	....	....	1.32	1.19			1 18	1.28	1.20	1 28	1 13	1.17	1 38	....	....	....	....
34-34.9	....	....	....	....	....	....	1.37	....	1.23	....	1 22	1 32	1 25	1.32	1.17	1.20	....	....	....	....	....
35-35.9	....	....	....	....	....	....	1.42	....	1.27	....	1 25		1 29	1.35	1.20	....	....	....	....	....	....
36-36.9	....	....	....	....	....	....	1.46	....	1.31	....	1.29	....	1 33	1.39	1.24	....	....	....	....	....	....
37-37.9	....	....	....	....	....	....	1.51	....	1.35	....	1.32	....	1.37	1 43	1.28	....	....	....	....	....	....
38-38.9	....	....	....	....	....	....	1.56	....	1.39	....	1.36	....	1 42	....	1.31	....	....	....	....	....	....
39-39.9	....	....	....	....	....	....	1.61	....	1.43	....	1.40	....	....	....	1 35	....	....	....	....	....	....
40-40.9	....	....	....	....	....	....	1.66	....	....	....	1 43	....	....	....	1 39	....	....	....	....	....	....
41-41.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.43	....	....	....	....	....	....
42-42.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.46	....	....	....	....	....	....
43 43.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.50	....	....	....	....	....	....
44-44.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.54	....	....	....	....	....	....
45-45.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.57	....	....	....	....	....	....
46-46.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.61	....	....	....	....	....	....
47-47.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.65	....	....	....	....	....	....
48-48.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.68	....	....	....	....	....	....



Oil industry's weekly statistics favorable

Continued favorable conditions in the oil industry were reflected in the latest weekly statistics. Both crude oil production and refinery activity remained comparatively low, and by virtue of the moderate plant operations, gasoline stocks were further reduced, although that storage normally is on the increase at this time of the year. Fuel oil stocks continued to increase, but the gain was smaller than in the corresponding week last year.

United States crude oil production in the week ended October 29, as reported to the American Petroleum Institute, averaged 3,237,500 barrels daily, or about 10,000 barrels a day less than in the previous week and 10.1 percent less than in the corresponding week last year.

Crude oil runs to stills for the week of October 29 averaged 3,145,000 barrels daily, which was 85,000 barrels a day less than in the previous week, and 5.9 percent less than in the corresponding week last year.

Gasoline stocks in the United States came down slightly from 67,695,000 barrels to 67,590,000 barrels during the week ended October 29. They were then only 1.1 percent above the level of the corresponding time last year. The gasoline storage situation is encouraging, and is having a stabilizing effect on the gasoline market.

Fuel oil inventories were increased about a million barrels in the week ended October 29, having risen to a new all time peak of 153,719,000 barrels. They were then 26.9 percent larger than one year previously.

Oil industry prices generally unchanged

Prices in the industry were generally unchanged during the past week, from well to service station, as the markets became steadier at the lower levels.

No further readjustments of crude postings occurred, and price changes among refined products were limited to some slight alterations of gasoline tank car quotations, in some instances upward and in others downward.

Kerosene and fuel oils were steady and prices were undisturbed.

Natural Gasoline

Natural gasoline, grade 26-70, was priced generally in the Mid-Continent markets f.o.b. refineries at 2¾ to 3 cents a gallon, and sales were reported at 2¾ cents f.o.b. Breckenridge, Texas.

U. S. motor gasoline ranged in the Oklahoma market last week about as follows: 62 octane and below, 3¾ to 4½ cents a gallon; 63 to 66 octane, 4 to 4⅝ cents; 67 to 69 octane, 4⅜ to 4⅞ cents; 70 to 72 octane, 4⅝ to 5⅜ cents.

Corresponding prices in the Chicago markets were 3½ to 4 cents, 3¾ to 4⅝ cents, 3⅞ to 4¾ cents and 4⅛ to 4⅞ cents.

In East Texas the most common gasoline, 60-62, 400 end point, was priced generally at 4½ cents a gallon.

Kerosene prices f.o.b. Oklahoma refineries ranged from 3⅞ to 4¼ cents a gallon for the 41-43 water white grade, and from 4⅛ to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3¾ to 4¼ cents and 3¾ to 4⅜ cents.

Fuel oil prices were not materially changed in the past week. In the Chicago market range oil was priced from 3¾ to 4 cents a gallon. The No. 1 white oil was priced from 3⅝ to 3⅞ cents, and No. 1 straw from 3⅝ to 3¾ cents. No. 2 straw was 3½ to 3⅝ cents. No. 3 oil was 3¼ to 3½ cents. No. 5 oils were 60 to 70 cents a barrel. The No. 6 oil was quoted at 35 to 50 cents.

Tanker construction is increasing

With the increased importance of petroleum products in the various countries of the world it has become necessary to speed up tanker construction. According to recent figures 98 vessels of 826,660 tons were under construction at the end of September. Of this total, 16 tankers of 142,349 tons were steam, and 82 of 684,311 tons were motor ships. Great Britain and Ireland took the largest share with 27 tankers of 228,913 tons, United States followed with 13 of 118,099 tons, Germany had 12 of 113,728 tons under construction and Holland's building program called for 12 of 95,500 tons.

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
September 25, 1937	3,666,300	*3,455,000	307,974,000	65,620,000	116,472,000
October 2	3,647,450	3,400,000	309,036,000	65,266,000	117,076,000
October 30	3,602,950	3,345,000	307,140,000	66,836,000	121,070,000
November 27	3,425,800	3,325,000	304,156,000	68,544,000	121,616,000
December 25	3,492,600	3,245,000	303,294,000	74,437,000	118,659,000
January 1, 1938	3,436,600	3,320,000	303,468,000	77,291,000	118,660,000
January 29	3,357,650	3,170,000	304,286,000	84,844,000	118,793,000
February 26	3,322,800	3,170,000	305,167,000	90,719,000	120,958,000
March 19	3,322,550	3,080,000	306,380,000	*93,192,000	122,067,000
March 26	3,405,600	3,080,000	307,557,000	92,858,000	122,979,000
April 30	3,396,150	3,215,000	307,147,000	91,339,000	128,270,000
May 28	3,098,650	3,150,000	301,583,000	87,946,000	134,315,000
June 25	3,083,900	3,025,000	293,463,000	82,412,000	137,801,000
July 30	3,316,400	3,240,000	288,514,000	76,864,000	144,294,000
August 27	3,388,500	3,255,000	285,029,000	71,754,000	146,926,000
September 24	3,251,150	3,220,000	280,278,000	68,605,000	150,468,000
October 1	3,231,800	3,235,000	280,852,000	68,602,000	151,759,000
October 8	3,249,350	3,205,000	279,007,000	68,706,000	152,275,000
October 15	3,271,600	3,310,000	277,001,000	68,426,000	152,648,000
October 22	3,247,400	3,230,000	276,652,000	67,695,000	152,796,000
October 29, 1938	3,237,500	3,145,000	.....	67,590,000	*153,719,000
October 30, 1937	3,602,950	3,345,000	†306,556,000	66,836,000	121,070,000
Change in past year	—10.1%	—5.9%	—9.8%	+1.1%	+26.9%

* All time peak. † Stocks, October 23, 1937.

Crude Production

United States output maintains same level as week preceding in averaging 3,386,250 barrels per day.

UNITED STATES crude oil production last week remained at about the same level as in the previous week. The nation's daily production amounted to 3,386,250 barrels during the past week, which was just 150 barrels above the previous week's level, but remained 5050 barrels under the Bureau of Mines estimated demand for November.

With a considerable smaller state allowable for Louisiana and with the continuation of Texas Saturday and Sunday shut-downs during November, it can be expected that next week's output will be approximately 170,000 barrels a day less than in the past two weeks.

Texas production increased 3050 barrels to 1,416,550 barrels daily, and was 45,550 barrels more than the federal allocation and 136,897 barrels more than the state allowable. Texas wells were permitted to produce on Sunday, October 30.

California last week averaged 657,100 barrels daily, a 100-barrel decrease, but was 40,400 barrels above its indicated market demand and 42,100 barrels above the state proration program for November.

Oklahoma's output of 436,975 barrels daily was 4950 barrels higher than in the previous week, and 8975 barrels higher than the state allowable, but 78,025 barrels lower than the Bureau of Mines recommendation.

Louisiana showed a 3700-barrel increase, as production advanced to 270,950 barrels daily, which was 14,650 barrels more than the indicated demand and 35,450 barrels more than the allowable prescribed by the state.

Kansas production of 144,600 barrels daily was 12,475 barrels lower than in the previous week, and 19,700 barrels lower than the federal allocation and state allowable.

Texas drilling permits total 241 in past week

Permits for drilling 241 new wells in Texas were approved by the Texas Railroad Commission last week, 21 less than were allowed the week before.

Operators in the East Texas field reported 83 new locations including 58 in Gregg, 21 in Rusk, two in Smith, and two in Upshur County. From the remainder of the East Central Texas area 11 locations were reported.

There were 29 permits granted to operators in the West Texas district, while seven were allowed for the West Central Texas area.

The commission approved 66 new locations in the Gulf Coast area with 14 in Harris County, while Southwest Texas operators were allowed 31 locations.

Ten permits were approved in North Texas, while Panhandle producers reported four locations.

Kansas stripper well hearing November 11

A special hearing will be held November 11 by the Kansas State Corporation Commission regarding the announced intention of Sinclair Prairie Oil Company to withdraw as purchaser from certain sections of the stripper area of southeast Kansas. In a telephone conversation with Nelson K. Moody, president of Sinclair Prairie Oil Marketing Company, Governor Walter A. Huxman requested that the company comply with a direction from the commission that the crude runs be continued in view of further deliberations. Montgomery County Producers Association appealed to the Kansas regulatory body to maintain the market for stripper production at its past level.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Nov.)	State Allowable in Nov.	BARRELS DAILY FOR WEEK ENDED Nov. 5	Oct. 29
TEXAS—				
Texas Panhandle	.....	.....	68,300	69,050
North Texas	.....	.....	85,600	85,400
West Central Texas	.....	.....	35,700	35,300
West Texas	.....	.....	226,600	227,150
East Central Texas	.....	.....	102,950	103,200
East Texas Field	.....	.....	424,100	423,700
South Texas	.....	.....	256,600	255,850
Texas Gulf Coast	.....	.....	214,600	213,850
Total Texas	1,371,000	1,279,653†	1,416,550	1,413,500
CALIFORNIA—				
Long Beach	.....	.....	55,100	54,300
Santa Fe Springs	.....	.....	30,700	30,500
Huntington Beach	.....	.....	30,800	31,100
Dominguez	.....	.....	25,800	25,500
Ventura Avenue	.....	.....	34,200	33,700
Midway-Sunset	.....	.....	49,400	58,800
Kettleman Hills	.....	.....	61,600	60,400
Wilmington	.....	.....	95,600	94,500
Others	.....	.....	273,900	268,400
Total California	616,700	615,000*	657,100	657,200
OKLAHOMA—				
Oklahoma City	.....	.....	88,075	85,450
Seminole Area	.....	.....	101,700	100,750
Fitts	.....	.....	38,350	38,050
Others	.....	.....	208,850	207,775
Total Oklahoma	515,000	428,000	436,975	432,025
LOUISIANA—				
North Louisiana	.....	.....	76,850	75,450
South Louisiana	.....	.....	194,100	191,800
Total Louisiana	256,300	235,500	270,950	267,250

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Nov.)	State Allowable in Nov.	BARRELS DAILY FOR WEEK ENDED Nov. 5	Oct. 29
KANSAS—				
Burrton-Haven	.....	.....	8,475	9,500
Russell County	.....	.....	19,575	22,350
Silica	.....	.....	10,625	10,700
Others	.....	.....	105,925	114,525
Total Kansas	164,300	164,300	144,600	157,075
NEW MEXICO	111,000	108,400	105,600	103,600
MICHIGAN	50,300	.....	52,500	54,700
ARKANSAS	52,300	52,000	49,225	49,200
MOUNTAIN STATES—				
Wyoming	74,700	.....	51,400	50,700
Montana	13,300	.....	13,800	14,250
Colorado	4,000	.....	3,600	3,450
Total Mountain States	92,000	.....	68,800	68,400
EASTERN STATES—				
Pennsylvania Grade	.....	.....	72,700	72,900
Southern Illinois (New Pools)	.....	.....	75,900	75,100
Illinois-Indiana (Old Pools)	.....	.....	12,400	12,250
Others, Eastern	.....	.....	22,950	22,800
Total Eastern States	162,400	.....	183,950	183,050
Total United States	3,391,300	..,...,...	3,386,250	3,386,400

†Shut-down for Sunday, October 30, lifted; allowable for November provides for Saturday and Sunday shut-downs.
*Recommendation of Central Committee of California Oil Producers.

Pacific Geologists

West Coast Meeting of A. A. P. G. features new California field geology and changes in beliefs.

A score of speakers addressed more than 400 petroleum geologists, paleontologists, mineralogists, engineers and other oil men, who attended the two-day meeting of the 15th Annual session of the Pacific Section of the American Association of Petroleum Geologists last week in Los Angeles.

Roy E. Barnes, Continental Oil Company was elected president of the Pacific section of the association. Dave Hobson of Continental Oil Company was elected secretary-treasurer. Barnes succeeds W. S. W. Kew.

The last business voted upon was to give $1000 to the University of California at Los Angeles to go toward the purchase of a library for the geological department.

Most of the papers were confined to discussions of California geology, and abstracts of most of them follow:

The Rio Bravo Field

By E. B. NOBLE, Chief Geologist
Union Oil Company

The Rio Bravo field was cited as the first to prove definitely the desirability of completing wells below 10,000 feet. Up until the time of the discovery of this field, geologists were skeptical that production in commercial quantities could be taken from tight sand at these extreme depths. However, the Rio Bravo sands were found to be loose and very productive, thus stimulating one of the most active drilling campaigns in Kern County. One of the interesting facts about the development of the Rio Bravo field was that it took eight months to complete the discovery well, but that since then, drilling time has been cut to 60 days. Initial wells cost around $200,000 at Rio Bravo, while present costs average $150,000 to $170,000 per well. Rio Bravo field was the third of a series of oil fields discovered by reflection seismograph.

Source of Upper Cretaceous Strata of Diablo Range

By RALPH D. REED

Upper Cretaceous sedimentary deposits are many thousands of feet thick along the eastern flank of the Diablo Range. They must have been derived from near at hand, and either from east or west. Recent studies have thrown some new light on the source problem and permitted one of the older theories to be issued in a revised version.

Stratiography of Northern Iran

By HUBERT G. SCHENCK

This report describes a generalized geological column for part of Amiranian Oil Company concession in northeastern Iran, north of the main road from Teheran to Meched. The column, which is based chiefly upon reconnaissance investigations by F. Reeves and B. F. Buie, shows a thickness of 30,000 (plus minus) feet of Mesozoic and Cenozoic sedimentary formations and 7000 (plus) feet of Paleozoic strata. The formations of widest areal extent are Liassic, upper, Jurassic, Cretaceous, Eocene, and Miocene in age. One of the best control sections for the Cretaceous and adjacent formations is northeast of Meched, where the Cretaceous totals 9000 plus minus feet. A marine middle Eocene formation totaling 575 feet thick, rests uncomformably upon "red beds" of probable Danian age. Upper Senonian Rudists and other Mega fossils occur in a 600-foot member immediately below these red beds. At the base of the Cretaceous section is the "red grit series," which is uncomformably underlain by limestones of Aptian age in the lower part of the Cretaceous sequence at many localities. No strictly marine fossils were collected from formations younger than Eocene.

Eastern Extension of Wilmington Field

By E. J. BARTOSH, Geologist
Bankline Oil Company

Since March 17, 1938, all principal development in the Wilmington field was in the Long Beach Harbor area. Several new faults of considerable magnitude have affected accumulation in restricted areas. Subsequent development will determine further outline of the subsurface structure.

The field has 534 active producing

Pipe Line News

Gulf interest plans 100-mile 16-inch Venezuela oil line . . . New cathodic units will be installed.

Eastern Venezuela to get 100 mile oil line

Mene Grande Oil Company, a Gulf interest, has completed tentative plans for the construction of a 100-mile 16-inch oil line from the new Oficina field of Eastern Venezuela to Guanta on the Caribbean sea.

Starting at Oficina, the route of the line will go north to tidewater by way of Cachama, Cantaura, Anaco (San Manuel), Caicaito, San Mateo, Guiamara, and thence to Guanta.

At Oficina the elevation is 900 feet, which drops gradually to 200 feet at Quiamara, giving the line a down hill run for fully three fourths of its length. Between Quiamara and Guanta it will have to cross fairly rugged terrain, which rises to 450 feet and dips to 50 feet.

Tentative plans call for erection of pump stations at Guanta and Oficina. Initial equipment will include generating units and a number of tanks. Stringing of pipe will start about January 1, and it is expected to be completed by June 30.

To install new cathodic units in Gulf Coast

Sun Pipe Line Company will install a 20-volt 80-ampere cathodic protection unit at its station in Jefferson County, Texas. The company also will install a 10-volt 60-ampere cathodic protection unit at mile post 7 at Orange, Texas, on its 6-inch line.

Magnolia's Illinois system nearly ready

Magnolia Petroleum Company is scheduled to have its crude gathering system in the Lake Centralia field, near Salem, Marion County, Illinois, in service by November 15. The company recently authorized the construction of 10 miles of feeder lines, comprised of 3-, 4-, 6- and 8-inch pipe, with an 8-mile 6-inch discharge line connecting to the Illinois Pipe Line Company's system at Sandoval. Two 10,000-barrel steel tanks have been erected at the field station.

Magnolia Petroleum Company is one of the most active operators in Illinois, having completed 44 wells, and its current field report lists 54 operations.

White Eagle installs Kansas cathodic unit

White Eagle Pipe Line Company, Inc., has installed a wind generator cathodic protection unit on its 4-inch pipe line in the W½ SW¼ Section 11-28s-1e, Sedgwick County, Kansas.

Ohio concern to change to natural gas

Ohio Gas, Light & Coke Company last week took preliminary steps leading to a changeover from manufactured gas to natural gas in the 7 northwestern Ohio towns it serves from a central plant located at Bryan.

The company would tap Michigan Gas Transmission Corporation's 22-inch line running from Texas to Detroit southwest of Wauseon, where a station would be built. The Bryan city council last week was asked for a new franchise, which must be granted before the Ohio company can negotiate further with the Michigan Gas Transmission Corporation.

Clyde McKinley, gas engineer of Mt. Pleasant, Mich., has located in Bryan from where he will make a survey of all the transmission lines and distribution mains of the Ohio company.

wells yielding an average of 95,000 barrels of oil daily. The total field production is about 45,000,000 barrels to date.

There are approximately 15 active drilling wells at the present time.

Possible Structural Interpretation of New Developments at Rosecrans

By JAN LAW, Assistant Petroleum Engineer
Union Oil Company

The area is an expression of shortening of section shown in folding and faulting. The structural trap is monoclinal closure forward by a buttressing of the monocline against an area of shearing. A contour map does not explain the lack of saturation in wells on the eastern end of the field. An explanation might be found for this lack of saturation with depth of the south dipping fault found cutting the southeast end of the field.

An inside location showing gray sands in the production interval requires a very complex system of faults which control production, and whose existence and position are not established. It is possible the miocene accumulation in general along the Inglewood uplift is not controlled by anticlinal closure.

The Newhall-Potrero Field

By RICHARD SHERMAN, Independent Geologist

This field was discovered by Barnsdall Oil Company in December 1936. The striking difference of vegetation in the Potrero portion of the field as compared with the surrounding area is due to the result of different lithology. But perhaps also from gas in surface soil that prevented growth of anything with roots deeper than grass. It was an interesting fact that considerable gas was noted in the seismograph shot holes. It was suggested that method of analyzing of surface soil for gas, which met with success in Russia and United States, would prove a practical adjunct to other technical procedures now employed in the quest for new fields.

Recent Developments at Potrero, Inglewood

By ROBIN WILLIS

The Potrero field differs from other fields on the Inglewood trend in the high gravity of the oil, the low angle of the dips, and the thin and streaked character of the sands. Previous development has been in general disappointing. Large wells going rather rapidly to water. Basin Oil Company's location is situated east of an inferred fault which may separate this area from the town lot field, and west of the main fault which separates it from the area developed by Tide Water Associated Oil Company. Basin's Potrero 1 was completed in May, with 10 feet of sand opened by perforations at 4620 feet, for an initial of 500 barrels of 47 gravity oil. It now is producing 290 barrels per day. This well and No. 2 have found a minimum of four zones which give promise of commercial production, with several other possibilities between 2800 and 6000 feet. Careful coring and electric logging show that the actual sands are thin, and apt to be interbedded with water sands, within the zones. Modern completion practice, however, permits the elimination of these wet streaks, and promises a more successful future for the newly opened area in this field.

Northwestern Extension of Long Beach

By ROBIN WILLIS, Geologist
Basin Oil Company

This area continues the productive territory of Long Beach west of the Cherry Hill fault into the uplift of the Los Cerritos Dome. The first successful well was the Petroleum Securities Company's Bixby 2, which has been producing since 1928. The next producer was Hilldon Flood Control 1, 300 feet down dip from the high point, to the northwest, which produced some oil from five zones between 4200 and 6100 feet. Hilldown's Amebco 1 was completed in July, 1937, at 4000 feet for 940 barrels initial, opening the new development. Sixteen wells have produced 1,000,000 barrels from the top zone. Six wells have been completed in the second zone around 4500 feet. Hilldown's Dominguez 1, northwest of the productive area in the upper zones, cored two more in the Miocene between 7300 and 7800 feet, and was brought in for 870 barrels initial in the lower, last July. The number of known undeveloped zones and the possibility of still deeper horizons promise a long steady production from this extension.

Nature and Extent of Movement Along the San Cayetano Fault, Ventura County

By H. D. HOBSON

The Texas Company's No. 2-1, located just south of the edge of the hills and adjacent to an outcrop of middle Miocene sand, drilled to a depth of 6565 feet and penetrated only nonmarine, Saugus type of material. The actual trace of the San Cayetano fault is not exposed in this immediate area. However, its approximate position near the southern limit of the hills east of Fillmore is attested by data from The Texas Company's well and outcrops within the hills. Obviously the fault must be between them. In computing the fault in the region east of Fillmore it is necessary to assume that the fault roughly parallels the southern front of the hills north of Santa Clara River Valley and is no great distance from it. With this assumption it is estimated that the hade of the San Cayetana fault at the Sovereign well is about 70 degrees and this this hade is maintained at least throughout the 5200 feet between the well and the assumed point of outcrop of the fault. At the Elkins location the hade of the fault appears to be about 65 degrees and to be consistent over a total lateral extent of not less than 5000 feet and probably more nearly 6000-6500 feet.

East Coalinga Eocene Extension

By L. S. CHAMBERS

The East Coalinga Eocene extension is a relatively new field, the discovery well, Petroleum Securities Company's Gatchell 2, having been completed on June 26, 1938. This well was a joint test with the Seaboard Oil Company and Honolulu Oil Company. This field is now being developed fairly rapidly from a geological standpoint, but none too surely. As unexpected variations in sand conditions have been encountered. The Gatchell sand was 326 feet thick in Standard Oil Company's No. 82-13C, and may be slightly thicker or considerably thinner at other locations. The sand is medium to coarse, clean and without shale breaks. It consists chiefly of angular quartz and black chert grains. Gravity of the oil varies from 33 gravity in the discovery area to 27 gravity in Superior's Hight 1 on the east flank. So far the wells have had a very low gas/oil ratio. If a gas-cap area exists, it has not been found. Production tests have not been exhaustive, but most wells are good for 10,000 to 15,000 barrels per day. Shut-in pressures run from 1300 to 2700 at the

[*Continued on page 76*]

Oil in the Courts

Gulf Oil official loses appeal against removal to Madison, Wisconsin, in trust suit . . . Mandamus hearing against judge of trust case heard today.

In Philadelphia, the Third United States Circuit Court of Appeals last week dismissed an appeal of William V. Hartman, Pittsburgh, vice president of Gulf Oil Corporation, and upheld a lower court order directing his removal to the jurisdiction of the Wisconsin federal court at Madison to stand trial on anti-trust charges.

Hartman was among officials of the Gulf company who fought removal for trial which started last fall at Madison. The Gulf company, meanwhile, was tried with other corporate defendants and won freedom when the court granted a motion to dismiss charges before the case went to the trial jury.

The Philadelphia decision was written by Judge John Biggs, Jr., and held that the circuit court was without jurisdiction in the case.

Once postponed, a hearing on a mandamus action filed by the department of justice against Federal Judge Patrick T. Stone, of Madison, Wisconsin, is to be held by the United States Circuit Court of Appeals at Chicago November 7. It had originally been set for October 24.

Judge Stone has been ordered to show cause, at the hearing, why his order of last July 19 by which he dismissed anti-trust charges against one major oil company and 10 oil company officials should not be set aside and a new trial ordered. The dismissal came after a jury found the company and individuals guilty following a four-month trial of the "first Madison case."

WEEK'S DRILLING HIGHLIGHTS

New Mexico

A semi-wildcat oil and gas well shortens the distance between production in the Rhodes pool of Lea County, New Mexico, and the Scarborough field in Winkler County, Texas. A promising test northwest of Hobbs is tied up with a fishing job. Volume of new drilling in the state continues high in spite of proration difficulties.

Michigan

Five wildcats showing for production emphasizes the idea that wildcat work in Michigan will be continued for months to come. Interest now is in the shallow limestone, with leasing underway along a 300-mile strip of western Michigan. The townlot at Bloomingdale added 13 wells for a total of 19, and 39 operations are active.

Oklahoma

Development of the gas reserve in the Oklahoma Panhandle has taken on speed during recent weeks and five wells have been completed. Western Oklahoma's deep wildcat has less interest now that it has passed 9,000 feet, but drilling continues. Deep test in the Chickasha gas field has reported minor oil shows, but is drilling toward its proposed 10,000 feet.

California

Two hundred feet of oil sand indicates that another field has been uncovered on the floor of San Joaquin Valley—the sixth such find since geophysics was introduced to the area. Meanwhile testing still is underway on the strike of a week ago within Los Angeles city limits. It is believed that this strike is separate from Wiley Canyon and Newhall, which are nearby.

Kansas

A wildcat strike in Russell County, yet to be thoroughly tested, is considered important because of being near the prolific Trapp area. The Cunningham pool was extended a half-mile south. A wildcat in Sedgwick County indicated a probable new gas field, but is drilling deeper in search of oil.

Rocky Mountain

Oil from rocks of Tertiary origin developed this week in swabbing an old well in the Hiawatha gas field, northwestern Colorado. The well had plugged back and perforated casing. The Cut Bank field was extended southwest by an above average producer.

North Louisiana

Perforating to test 20 feet of saturation, a well that will extend Shreveport production southeast had good prospects of being a producer. Webster Parish is slated to get a test to 9000 feet and two projects to 6000 feet have been started in the old Caddo field.

Illinois

North extension of Lake Centralia again was in doubt as try was being made to make a pumper out of a two-mile stepout that had light saturation. Magnolia Petroleum Company has some kind of a show in a Jefferson County wildcat. Phillips Petroleum Company has started work on a 3000-acre lease block.

Kentucky

A flow of 75 barrels an hour that resulted when pay had been penetrated 28 inches is believed to have opened a new pool as the oil is different from Birk City, from which the well is several miles removed.

Arkansas

The third producer for the Magnolia field in Columbia County has a good section of saturation in the Permian. The quietness of Rodessa's north end was broken by an extension. The eighth well at Buckner is a pumper.

South Louisiana

A new field in Cameron Parish was opened with a flow of distillate and gas from a wildcat in the Chalkley area. A new sand at Venice makes that a twin-well area.

Comparison of Permits Granted for New Wells

STATE	Week Ending Nov. 5	Total this Mo.	Total this Year	Total this Date Last Year	1937 Year Total
Arkansas	3	3	207	222	240
California	....	....	1,018	1,360	1,584
Louisiana	....	....	1,069	1,100	1,227
Kansas	20	20	1,334	2,401	2,663
Michigan	31	31	802	851	958
Oklahoma	39	39	1,773	2,411	2,711
Texas	241	241	11,079	15,198	17,238
Total	334	334	16,480	23,543	26,621

Summary of Wells Completed in the United States Week Ending November 5, 1938

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total, 1938	Total this Date, 1937
Alabama	.....	.....	.....	.....	.....	2	1
Arkansas	2	2	.....	.....	1,108	191	112
California	27	22	.....	5	17,955	1,084	1,280
Colorado	.....	.....	.....	.....	.....	6	17
Florida	.....	.....	.....	.....	.....	.....	1
Georgia	.....	.....	.....	.....	.....	1	.....
Illinois	96	68	.....	28	20,024	1,366	286
Indiana	.....	.....	.....	.....	.....	124	122
Kansas	30	22	2	6	27,409	1,462	2,306
Kentucky	23	15	.....	8	2,479	695	424
Louisiana	23	12	2	9	2,724	935	837
Michigan	40	28	1	11	15,531	836	824
Mississippi	2	.....	.....	2	.....	16	13
Montana	1	.....	.....	1	.....	68	177
Nebraska	.....	.....	.....	.....	.....	1	.....
North Dakota	.....	.....	.....	.....	.....	1	.....
New Mexico	6	4	.....	2	1,178	454	596
New York	*11	10	.....	1	27	*573	*1,092
Ohio	19	7	7	5	107	817	1,270
Oklahoma	31	20	1	10	1,652	1,852	2,588
Pennsylvania	*24	16	4	4	42	*1,775	*2,576
Tennessee	.....	.....	.....	.....	.....	2	.....
Texas	243	184	5	54	176,241	10,844	13,077
Utah	.....	.....	.....	.....	.....	3	.....
West Virginia	17	5	11	1	62	610	798
Wyoming	4	2	.....	2	1,812	95	94
Total this week	599	417	33	149	268,351	23,813	28,491
Total last week	537	381	43	113	281,268	.....	.....
Total this year	23,813	16,501	1,688	5,624	15,117,693	.....	.....

* Includes water-intake and pressure wells.

Oklahoma Fields

Oklahoma Panhandle gas development gains momentum. Chickasha deep test reports finding minor oil showings. Location made for second test in Garfield County area.

Tulsa.—Gulf Oil Corporation's Taylor 1, SE SE SW 1-7n-2w, one mile north of Gus Delaney's Noble pool opener in southwest Cleveland County, has passed the 7400-foot marker and is drilling ahead for Wilcox. The well has only about 250 feet more to go before the Wilcox is topped, provided that it finds the sand at approximately the depth the pay was reached in the discovery. Taylor 1 topped Hunton lime at 7005 feet, went into Sylvan shale at 7170, Viola lime at 7300, and Dense at 7365 feet.

The projected 10,000-foot test in Chickasha gas field of western Grady County, Carter Oil Company's Smith 1, CSE SW 26-5-8w is drilling below 4700 feet. After encountering fair shows of good crude farther up the hole the well cut a pay carrying some heavy oil and a test was made. Packer was set at 4688 feet and with the well open 10 minutes 30 feet of mud and fluid were recovered showing some heavy asphaltic crude.

Phillips Petroleum Company's Mandler 1, SE SW NW 1-6n-10e, wildcat northeast of Calvin in Hughes County, failed to test for a commercial well after encouraging shows between 2873 and 2883 feet and the hole was deepened. At 3376 to 3386 Gilcrease sand was cored and 2 feet of dry white sand and 8 feet of sand and shale were recovered.

The Texas Company's Longon 1, W½ NW NW 12-17-1e, southwestern Payne County, which opened a new pool last spring but which was never given a thorough test, is being put on production. When opened the well flowed 380 barrels in 8 hours by heads, through casing. The flow headed every 50 minutes, making about 35 barrels during each flow. Total depth is 5006 feet with a plugback to 4960 feet in Wilcox sand topped at 4874 feet. Casing is set at 4960 feet. The discovery is expected to be placed on steady production in the near future. A 20-acre spacing plan has been proposed for the area and hearing before the commission will be held November 9. It is expected that production may exceed the test rated flow as the well has not yet been thoroughly cleaned out.

Nels Burton Drilling Company have obtained Helmerich & Payne's wildcat test east of Norman and south of Moore field in 7-9n-2w, Cleveland County. The new operator is cleaning out the hole, which has never been definitely abandoned, and will use acid on Simpson lime which gave a minor show during drilling operation. Treatment is to be made from Dense at 7345 to 7695 feet, total depth.

Gulf Oil Corporation's Lester 1-7, C NW NW 35-2s-3w, in the deep Fox area of Carter County, which showed for production at 8134 in Oolitic lime after heavy acid treatment, has begun making considerable water. However, through efforts of the operator the water has been diminished and on last test the well flowed 152 barrels of crude with no water. Other wells drilling to the deeper pays in this area are above important depths but drilling below the 6,000 foot mark.

Globe Oil & Refining Company is reducing takes in the Oklahoma City field to approximately 3,000 barrels per day. This is a reduction of about 1,000 barrels, although there is no intention of further curtailment of takes as has been reported. An outlet has been obtained for Kerlyn Oil Company et al's State Orphanage 1, SE SW NW 21-13-3w, south of Britton pool in Oklahoma County which recently opened a new lime pool. Sinclair Prairie Oil Company has laid a 2-inch line to the well. At present rate of flow the well will produce 185 barrels per day which could possibly be increased by an acid treatment.

Panhandle Gas Development

The slow development of the Oklahoma Panhandle for natural gas has picked up speed recently and is living up to earlier predictions as an important gas producing area. Five recent completions, one for 20,000,000 cubic feet per day, have added a total of 76,900,000 cubic feet per day to the openflow of the area. Republic Natural Gas Company's Thrall 1, C 22-6n-14ecm gauged 9,400,000 cubic feet; Judd 1, SW SW 24-6n-15ecm gauged 14,100,000 cubic feet; Clinkenbeard 1, NW NW SW 21-6n-14ecm gauged 14,800,000 cubic feet; Bunger 1, SE SE 13-6n-15ecm gauged 17,800,000 cubic feet and Blackmer 1, C 15-6n-15ecm received a rating of 20,800,000 cubic feet per day.

The gas pay in this area corresponds to the sandy-lime sections of the Hugoton field and the laminated dolomite lenses and breaks of the Texas Panhandle. Depth to the pay is fairly uniform at about 2850 feet, although the pay itself is not uniform, light gas being picked up above the top of the regular pay with definite increases to total depth. The pay formation is subject to acid treatment and this method of increasing potentials is used on many completions with good results. Rock pressures are below 450 pounds throughout the region, being subnormal. Very little fluid is encountered and so far the only oil shows are infrequent occurrences of dead oil high in the lime, these being more prevalent farther to the south than present drilling.

The completions of Republic Natural Gas Company are in north Texas County, just south of the Kansas line from Hugoton field, and on the established trend of the production into the Texas Panhandle. The largest completion exceeds the biggest producer in the Hugoton area which was drilled by Panhandle Eastern Pipe Line Company and gauged 18,500,000 cubic feet. On south from the listed completions, in the Guymon sector, completions have been rated at 40,000,000 cubic feet without stimulation by acid, indicating that openflow volumes will increase toward the Texas Panhandle gas field where wells in excess of 100,000,000 have been completed. To date development in the Oklahoma Panhandle has not been sufficient to more than establish the potentialities of the trend. Leases in the gas area are almost solidly blocked and it is expected that development of the reserve will steadily increase. The proposed natural gas transmission line to northern states, soon to be argued before the federal board at Washington, would do much toward bringing about an intensified drilling campaign in the Oklahoma Panhandle.

The most important drilling wildcat

OKLAHOMA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Comanche—		
Wichita Oils, Inc., Palmer 9, ne sec nw 28-2n-10w	4	476
Creek—		
Jackson, Miller Tiger 1A, c n½ sw 17-17n-7e	96	2797
Gled Oil Co., Escoe 8, ne ne sw se 27-18n-8e (otd 1330 ft)	70	2644
Garvin—		
Skelly Oil Co., Jones 1, swc se 19-1n-3w	30	3920
Jackson—		
Fish Drlg. Co., Mattie 1, sw nw sw 5-1s-19w	58	2580
Logan—		
Continental Oil Co., Lovell 2, nw sw ne 16-18n-4w (pb 3700 ft)	¶18.75	4190
McClain—		
Vallines, Pearson 1, se sw ne 13-5n-3e	*	3006
Muskogee—		
Robinson Oil Co., Allred 1, sec sw 18-13n-16e	*	2168
Okfuskee—		
Grimes, Harjo 2, sw sw se se 26-11n-9e	15	1495
Oklahoma—		
I. T. I. O. Co., Canfield 3, sw se sw 19-11n-2w	262	2730
Gulf Prod. Co., Schuster 2, ne sw ne sw 15-12n-3w	*	6485
Hollenbeck et al, Landen 1, s½ s½ ne sw sw 15-12n-3w	*	6379
Hollenbeck, Sinopoulo 2, sw se sw 15-12n-3w	*	6370
Okmulgee—		
Rebold, Forman 1, cel nwc 24-13n-12e	5	1297
Berry Bros., Nubbie 1, nw sw ne 9-14n-12e	*	2727
Brady, Parks 4B, 200 ft east of c s½ ne 9-15n-11e	8	1889
Allen, Fish 2, se sw ne se 25-16n-11e	2	2241
Osage—		
Elliott et al, 1, ne nec nw 20-21n-9e	*	580
Branstetter, 2, sw sec 29-22n-11e	8	892
Houston, 6, sw se sw 28-23n-9e	*	437
Pontotoc—		
Magnolia Pet. Co., Jewis 1, swc 19-2n-7e (otd 4002 ft)	30	4350
United Oil Co., Standridge 2, sw nw se 25-5n-4e (otd 2603 ft)	25	2500
Sinclair Prairie Oil Co., Starritt 3B, ne nw ne 21-5n-5e	75	2540
Pottawatomie—		
Clark & Co., Engle 1, nw se ne 27-7n-4e	*	3450
Taber & Ccleman, Green 2, ne sw ne 35-7n-4e (pb 3420 ft)	252	4201
Seminole—		
Smith, Austin 4, sw ne se 32-7n-6e	200	2889
Wood Oil Co., Tiger 2, nw ne se 2-8n-6e	407	4193
Rodgers & Rodgers, Robinson 1, swc se 36-8n-7e	30	3140
Sinclair Prairie Oil Co., Baker 1, ne se se 29-10n-8e	(input well)	4329
Stephens—		
Sikes, Mulkey 10, nw ne ne 16-1s-8w	*	2189
McAllister, Wade 3, ne swc ne 11-2s-8w	75	2068

*Failures; †Junked; ¶Million cu. ft. gas.

in the western part of Oklahoma has failed to show after going to 9,000 feet. The test is Continental Oil Company's Proctor 1, C NW¼ 28-10n-20w, 9 miles southeast of Elk City. Nearest production is in the Sayre area of Beckham County where considerable gas and some oil is being produced. Proctor 1 had the top of Anhydrite at 3800 feet, dolomite at 4287 and drilled Big lime from 4360 to 4460 feet. The test entered the Pennsylvanian section at 6437 feet. At 9000 feet no commercial shows had been encountered and the test was drilling ahead with interest subsiding.

Champlin Refining Company has made location for Boehm 2, CNL SE NW 4-24-8w, in the newly discovered Hillsdale pool of northwest Garfield County. The discovery well, Boehm 1, was drilled to second Wilcox sand at 6690 feet on a structure worked by surface geology, seismograph, magnetometer and core drill. In its best gauge the well flowed 873 barrels in 24 hours. However, water began to show and although the latter has been reduced, it is still troublesome. Boehm 1 is now averaging 375 barrels per day, cutting 8 percent water. Crude is trucked to Enid.

Important wildcat test locations have been announced during the week that may open a new trend in the state. Pioneer Drilling Company has a twin location in Polk 2, SE NW NE 35-7-4e, in the St. Louis area of Pottawatomie County. In Okfuskee County, Burke-Greis has staked Repologue 1, NW SE NE 26-11-8e, a wildcat. Ace Gutowski's Lankard 1, NE SE 34-17-6w, is a wildcat in northeast central Kingfisher County, 12 miles west of the Nemaha Ridge play. Harry Acre et al's Atchinson 1, C NW NE 13-24-11w is a rig and cellar in southern Alfalfa County, on the eastern edge of the western Basin.

Oklahoma not greatly affected by new law

Local offices of companies operating out of Tulsa will see very little change due to the wage-hour law. About 85 percent of them were already on a straight 40-hour week and there does not appear to be an exception to the 44-hour maximum. Some detail work that has required overtime on the part of a few employees is being restricted, or is being spread out among less pressed employees. Compliance with the new law requires added time-keeping which is being done either by the employee himself or by the regular department.

A great number of the smaller firms are not well informed on the new law and do not know if it applies to them, or if it does, to what extent. This is particularly true of operators with activity centered in or around smaller towns and cities where they are more or less out of direct contact with major operations. Some Illinois operators and contractors, more or less local to the area, are ignoring prospective changes in that they are already paying considerably above the minimum and although working some employees in excess of a 44-hour week are paying considerably in excess of 1½ times the minimum wage. Firms operating more widely are meeting the law in manner

[*Continued on page 75*]

Kansas Field Developments

New Russell County pool is adjacent to Trapp production. Cunningham pool is extended south on Pratt County side. Sedgwick County wildcat passes up gas to try for oil.

Wichita. — Kansas operators opened one new pool during the week with a successful wildcat in south Russell County. As the strike is only 1¼ miles from prolific Trapp production, it may mean a major extension when developed. The well is Western Kansas Oil & Refining Company's Schneider 1, NE NW 35-15-14w, southwest of Trapp, a farmout from Ohio Oil Company. Arbuckle lime was topped at 3345 feet and the hole carried to 3355 feet, with casing set at 3346 feet.

After cleaning out a bridge following drilling of plug, the well filled 2100 feet with oil and when tested pumped only a light production. After treating with 2000 gallons of acid the well made 40 barrels per hour for 4 hours on pump and filled tankage and shut in for lack of pipe line outlet.

The indicated extension to Cunningham pool of Kingman and Pratt counties came through as a completion to extend production a half-mile south on the Pratt County side. Skelly Oil Company's Moore 1, C SL S½ 25-27-11w, obtained a daily potential of 825 barrels after filling 1000 feet with free oil. Hole is at 3484 feet in Kansas City lime.

A wildcat southeast of Wichita about 7 miles, with nearest production in the Derby gas area 4 miles west, looks like another gas field for Sedgwick County although operators are drilling ahead to lower horizons for crude production. The gas was picked up at 2212 feet and was estimated at about 500,000 cubic feet, and increasing as it was vented. The show was killed and drilling was continued.

Derby Oil Company and E. K. Casey Drilling Company's Jones 1, NEc NW 7-22-1w, on the south trend of Graber pool of McPherson County but with a Harvey County location, has encountered shows in Misener sand at 3283 feet, although the sand was tight for commercial production. In the test the Misener was on Hunton lime, which likewise carried a fair show. No test has been made and the well will probably be continued to deeper strata. Although there have been a number of trys to extend the Garber trend, only one small producing area has been opened, this being Hesston pool. The same operator has completed a flowing well on the east side of Zenith pool, Stafford County, when McComb 3, NE NE NW 24-24-11w, flowed 31 barrels per hour for 5 hours from the sand at 3822 feet. The hole was shot with 10 quarts as some of the tests have found the sand to be of low porosity in the south section of the field.

Shell Petroleum Corporation is connecting Trapp and South Trapp pools in Bitter 1-B, SEc 6-16-13w, which drilled to 3359 feet in Arbuckle lime. From this depth the hole filled to within a few feet of the casing top. An early test is expected. Another possible extension is F. H. Hollow and Bridgeport Machine Company's Beck 1, SE SE SW 6-18s-10w, southwest of Habiger pool in Rice County. Cement is setting on casing as the week is closed, with hole at 2306 feet in Kansas City lime. Good saturation was encountered. The well is a half-mile southwest of production.

Kansas potential production has decreased by 191,380 barrels per day according to the recent tests. This puts the daily potential at 3,399,449 barrels under last month. Of this total, 3,351,838 is potential production from 4672 wells in prorated pools.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton—		
Shell Pet. Corp., Schneider "B" 8, se nw nw 1-16s-14w	1176	3312
Stettinger 5, csl sw nw se 1-16s-14w	2640	3345
Hoffman "B" 3, sec ne 12-16s-15w	32	3385
Bruce Oil Co., Linsner 3, se sw se 3-17s-13w	1175	3362
Continental Oil Co., Ford 2, nec nw 10-17s-13w	(input well)	3774
Stanolind Oil Co., Kowalsk 10, cwl nw ne ne 11-20s-11w	2012	3281
Butler—		
Bowland & McCoy, Frankson 1, sec sw 2-29s-6e	*	62
Cowley—		
Archer et al, Chance 1, nw sw nw 21-32s-5e (pb 3054 ft)	272	3056
The Texas Co., Beeman 2, sec sw 33-31s-3e	*	3325
Wilson 2, nw rw ne nw 4-32s-3e	1790	3238
Ellis—		
Shell Pet. Corp., Rumsey 8, se sw nw 23-11s-17w	3374	3367
Rumsey 14, se ne nw 23-11s-17w	3508	3384
Grant—		
Panhandle Eastern Gas Co., Joyce 1, c se¼ 36-30s-37w	¶3.5	2798
Greenwood—		
Duncan et al, Schneider 7, nwc sw 16-23s-13e	27	1796
Christy, Pusey 3, nw se sw se 31 24s-13e (pb 1548 ft)	15	1651
Harvey—		
Bridgeport, Dreese 2, sw ne ne 2-23s-2w (pb 2993 ft)	100	3351
Rice—		
Cities Service Oil Co., Zajic 2, ne nw se 11-18s-8w (pb 3262 ft)	554	3275
Gulf Oil Corp., Ames 1, 78 ft south nwc 6-18s-10w	2098	3245
Springrose, Brubaker 1, c se ne 2-20s-8w	¶10.50	3330
Russell—		
Skelly Oil Co., Colliver 2, cwl nw ne se 28-14s-13w	1338	2903
Sinclair Prairie Oil Co., Rogg 3, swc se 29-14s-13w	670	2908
Stanolind Oil Co., Krug "A" 1, nec 27-14s-14w	1109	2988
Sedgwick—		
Prunty Prod. Co., Rausch "A" 3, ne nw se 16-25s-1e	1145	3145
Magnolia Pet. Co., Trust Co. 8, se ne ne 19-27s-2e (otd 2954 ft)	100	3218
Stafford—		
Crosbie, Inc., Johnson 4, se nw sw 13-24s-11w	1619	3822
Pure Oil Co., Krey 10, ne sw se 14-24s-11w	2655	3816
Sumner—		
Vickers, Blue 1, 100 ft east csl nwc 1-33s-2w	*	3955
Shawver & Glimac Oil Co., Warr 1, c sw sw 13-34s-2e (pb 2915 ft)	*	3830
Woodson—		
Cavalcade Oil Co., Maglaskey 1, se nw se se 19-23s-14e	*	1667
Baker et al, Allen 1, ne nw ne 30-25s-14e	*	1512

*Failures; †Junked; ¶Million cu. ft. gas.

West Texas Fields

Slaughter field production is extended two miles west.

Bennett field outposts finding all markers encouraging.

Midland, Texas.—A two-mile west expansion for the Slaughter field, Hockley County, was attained when The Texas Company's Mallett 1-B, southwest corner Labor 1, Scurry County School Lands, swabbed 1 barrel oil per hour on 8-hour test after using acid at 5007 feet. This outpost filled 1500 feet with oil from broken lime pay topped at 4952 feet, or 1383 feet below sea level, before treating with 1000 gallons of acid. Pressure ranging from 1530 to 1800 pounds was employed to inject the acid due to the absence of normal porosity. Additional acid treatments are expected to develop commercial production. Mallett 1-B checked about level with nearest producers in logging top of solid lime at 4180 feet. The Texas Company holds lease on the bulk of the intermediate acreage.

Prospective southeast and southwest extensions to the Bennett field, Yoakum County, remained encouraging as additional markers were logged by the outposts. Shell Petroleum Corporation's Ruyts 1, SW NW NW Section 743, 1¼ miles southeast of the field, logged top of brown lime at 4160 feet and first solid lime at 4650 feet, with an elevation of 3544 feet, and has cemented 5½-inch pipe at 4850 feet. John Mabee et al's Willard 1, NE NE NW Section 741, one mile southwest of production, is also checking relatively high in logging top of Yates at approximately 3145 feet, with an elevation of 3556 feet, and was drilling at 3980 feet.

One of the largest deals involving the subleasing of proved checkerboard leases for an over-riding royalty interest is reported pending in the Yoakum County sector of the Wasson field, which is rapidly piling up required offsets due to major extensions in recent months. A large company is credited with having entered negotiations for the assignment of eleven 80-acre tracts to be cut out of leases ranging from a quarter to a full section in area for development on a one-eighth over-riding royalty basis. Each tract calls for the immediate drilling of one or more offsets to production. Another company is reported to be negotiating for the assignment of leases in the Bennett field on similar terms because of a top-heavy drilling program pending if the two outposts yield prolific production. The above fields are confronted with pipe line proration, else a sharp reduction in proration allowables per well because pending completions will exceed the available pipe line outlet provided by Humble Pipe Line Company's 6-inch extension from the Hobbs field.

The Texas Company's Keller 1, NW SE SW Section 860, north offset to an outpost producer on the west central flank of the Wasson field, flowed 380 barrels natural in 20 hours through open tubing from lime at 4976-5115 feet. The gas/oil ratio was estimated at 4380 feet per barrel. Tubing packer is to be lowered to try and attain a lower gas yield. The offset was given three acid treatments to develop an initial flow of 464 barrels of 32.9 gravity oil.

H. C. Wheeler et al's Farmers State Bank (Carlton) 1, C SE SW PSL Section 18, Block A-36, Andrews County wildcat and west of the Means field, swabbed one-half barrel of oil per hour on 12-hour test after using 1000 gallons of acid at 4615 feet. The Texas Company's University 1-H, wildcat situated south of Shafter Lake, logged first oil saturation at 4329-32 feet, with additional shows at 4360-67 feet and at 4391-4400 feet, and was drilling at 4420 feet.

L. H. Wentz et al's Cowden 1, NEc T&P Section 3, Block 43, Andrews County wildcat on a direct trend between the North Cowden and Emma fields, is preparing to deepen with cable tools after cementing pipe at 4031 feet. Top of Yates was logged at 2780 feet, with an elevation of 3129 feet, being about level with the abandoned discovery producer of the Emma area.

John W. Emch et al's Texas Pacific Land Trust 1, C N½ S½ SW T&P Section 203, Block 1, Reagan County wildcat and 2 miles east of Big Lake, is scheduled to plug back and acidize oil shows passed up in drilling to sulphur water in the lime at 2680-2700 feet and 2748-52 feet. First oil shows were logged at 2485-2500 feet, and oil saturation was reported at 4 lower levels in drilling to 2640 feet, where the test bailed 2/3-barrel of 34 gravity oil. Top of lime was called at 2365 feet, with an elevation of 2676 feet. Reagan County contributed the Big Lake field, the first prolific Permian lime strike for the basin, and a small pool, but scores of wildcats in various sections of the county have been failures.

Magnolia Petroleum Company's University 1-6, SEc Section 6, Block 30, fourth oil pumper for an unnamed pool situated in eastern Crane County be-

WEST CENTRAL TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Brown County—		
R. R. Byrd et al, Looper 1	†	2520
W. D. Cunningham et al, Davis 1	*	700
Delmarva Oil Corp., Shelton 1	*	642
Eakin & Adams, Williams 1	21	1101
Gilcrease Oil Co., Newsom 1	*	2467
Hart et al, Richmond 2	4	1353
Hightower O&R Co., Mullins 5	10	1245
Mullins 6	8	1243
Linninger et al Commer 1	*	1640
Mitcham et al, Newton 1	23	1260
Selvidge et al, Perry 2-B	5	1251
Whitesides & Rogers, Newton 1	18	1247
Callahan County—		
Hal Hughes Pet. Co., Straley 1	¶1½	3408
J. O. Sullivan et al, Jackson 1	*	1402
Coleman County—		
Brannon & Murray, Dibrell 1-B	48	1932
Dibrell 2-B	35	1934
Fikes et al, Stevens 1	*	721
Hoffman-Page Co. et al, Drake 1	*	3147
Comanche County—		
Sells Pet., Smith 1	20	2798
J. H. & J. P. Whitesides, Anderson 1	2	588
Eastland County—		
H. D. Gallager et al, Hearn 1	*	1600
Monark O&G Co., Downtain 1	*	3050
Reeves et al, Downtain 1-B	15	1501
Shackelford County—		
Beaumont et al, Harbough 1	6	922
Carson et al, M. Davis 1	*	1670
Danciger, Ivy 1	10	3223
Iron Mt. Oil Co. et al, Beck 5	400	3222
Ivy 3	396	3217
Keys et al, J. Diller 1	3	496
J. Diller 2	*	496
Lee & Keys, J. Diller 8	4	523
Owens-Snebold Oil Corp., Ivy 8	275	3223

*Failures; †Junked; ¶Million cu. ft. gas.

WEST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Andrews County (Fuhrman)—		
Fuhrman Pet. Corp., Ford 13	1646	4455
Andrews County (Wildcat)—		
H. S. Forgeron-Olson Dr. Co., Lockhart-Brown 1	*	4981
Dickens County—		
J. F. Morrissey Co., C. D. Bird 1	*	2556
Ector County Foster)—		
Arkansas F. O. Co., Johnson 4	736	4217
Arrow Dri. Co.-York-Harper, Inc., Foster 4	1034	4293
Shell, Witcher 5-A	1390	4186
Ector County (Goldsmith)—		
Devonian Oil Co., Scharbauer 8-F	863	4197
Gulf, Goldsmith 130	896	4270
Goldsmith 131	480	4260
Goldsmith 132	2464	4205
Goldsmith 133	1328	4200
Phillips-Pure, Cowden 43	1200	4155
Cowden 44	1143	4183
Cowden 45	1072	4162
Cowden 47	1640	4188
Ector County (Harper)—		
Wentz et al, Moss 8	137	4485
Moss 9	2405	4150
Ector County (Jordan)—		
Shell, University 2-E	1580	3645
Ector County (North Cowden)—		
Landreth Prod. Corp., Blakeney 2-A	1057	4210
Octagon Oil Co., Woods-Amerada 1	527	4328
Howard County—		
Eastland Oil Co.-Ambassador Oil Corp., T P Land Trust 3-A	812	2798
Gulf, Chalk 8	948	3180
Lockhart Pet. Corp., Heusinger 3	796	2812
Magnolia, O'Daniel 3	148	2800
Scott 2	30	2800
Noble et al, Scott-Hyman 1	462	3148
Jones County—		
Condor Pet. Co., Sayles 18	385	1975
Fain-McGaha Oil Corp., Milsap 1	*	2151
Humble, Chittenden 1	300	3022
Iron Mt. Oil Co.-Humble, Peterson 3	750	3239
Petroleum Prod. Co., J. Milsap 9	265	1946
Ungren & Frazier, Steffens 1	262	1891
Runnels County—		
John Castor-Koerner & Goodrich, Beddo 1, blk 41	*	2316
Taylor County—		
Charter O&G Co.-A. R. Forester, Frederickson 2	150	2380
Knowles, Tr., Andrews 1	*	2178
Upton County (McCamey)—		
Burleson et al, Long 1	*	2130
Cardinal Oil Co., Starnes-Fowler 5	202	2292
Pittman et al, Sanger-Conoco 2	762	2348
Shell, Rogers 3	165	2640
Sylvia Oil Co., Baker-Conoco 8	1216	2363
Ward County—		
Gulf, Estes 107	2760	2520
Luse & Ice, Brictson 2	504	2102
Brictson 3	71	2100
Magnolia, Sealy 11-46	307	3069
Westexas Oil & Roy. Corp., University 4-C	3559	2670
Western Well Service Corp., Johnson 2-E	367	2045
Johnson 5-E	325	2083
Reynolds-Lackland 1	*	2351
Winkler County (Kermit)—		
Humble-Tide Water, Walton 15-D	644	2990
Magnolia, Walton 191	1818	2912
Walton-State 17	801	3250
Yoakum County (Bennett)—		
Cascade Pet. Co., Bennett 1-A	1072	5270
Honolulu Oil Corp.-Cascade, Bennett 4-678	1699	5255
Yoakum County (Wasson)—		
Gulf, Elliott 1	210	5241
Murchison et al, Willard 3	247	5146
Wynne, Tr., Fairman 4	238	5226

*Failures; †Junked; ¶Million cu. ft. gas.

tween the Church & Fields and Gulf-Waddell areas, pumped 87 barrels of oil the first 24 hours and 40 barrels the second day after 250-quart nitro shot at 3170-3250 feet. Bottom-hole water logged at 3500-03 feet, with an elevation of 2646 feet was plugged off. Standard Oil Company of Texas' University 1-6, SW SE NE Section 6, Block 30, the only remaining operation in the area, was drilling at 2240 feet.

Gulf Oil Corporation's S. P. Swenson 1, northeastern Garza County Ordovician project, was drilling in lime at 8050 feet, with an elevation of 2274 feet, and is credited with having entered the Ordovician section. A string of 7-inch pipe will be cemented, and gun-perforated for a series of production tests in oil-saturated zones passed up below the 6200-foot level when the depth contract is fulfilled.

Humble Oil & Refining Company's M. R. Robertson 1, C NW NE Section 27, Block OW, northwestern Pecos County wildcat that centers upon a large lease block, was drilling at 5190 feet, with the Delaware as its objective.

Oklahoma wages

[*Continued from page 73*]

most adaptable to their particular needs as regarding employment.

There is some question as to the application of the new law to employees engaged in pipe line operation, although a majority of legal advice as well as managements feel that the law does not apply and cite: "Any employee of an employer subject to the provisions of Part 1 of the Interstate Commerce Act . . .," Section thirteen of the act.

Being interstate, pipe lines are subject to rules and regulations governing interstate transportation and carriers. A large pipe line system, representative of similar firms, had placed station employees, gaugers, machinists oilers and auxiliary men on a 6-hour week prior to the enactment of the law. As wages are well in excess of the minimum, no changes are necessary. Employees engaged as watchmen who commonly work more than the 44 hours will have their hours cut to or under the maximum, this necessitating additional help in a few cases. Most employees of this character are elderly employees of long standing with the firms and are not desirous of more active employment.

One producing and operating firm is going from a straight eight-hour day to a six-hour, employing one new crew. However, each crew will be reduced by one man where possible. When this is done with a crew of four men or less it places no more employees on the payroll, and where an established per-hour rate is observed in the new setup, it decreases the per-month income of the older employees by decreasing the number of hours worked.

Another producing and operating firm employing a large number of men will "add very few" and these will be absorbed without adding to payroll expense. The added men will merely take up slack above the 44-hour maximum, the income derived from hours worked in excess of 44 prior to the law

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will compensate the newer employees for their time.

Drilling contractors are generally going to a 6-hour crew although there are a number of exceptions. One firm is going to a straight six-hour tour, with wages based upon the hours actually worked. Roustabouts will be reduced in number, a three man gang will become a two man crew, a four a three, and so on as far as the jobs will allow.

This firm is applying the 6-hour tour in New Mexico, Texas and Illinois but is holding to eight hour tours in Oklahoma and Kansas, where the crews will work only 5 days, an additional crew taking up the slack of the week. The new 6-hour tours will see each man's wages raised slightly on a per-hour basis, any differential being applied on the earnings of the added crew.

Another contractor is holding strictly to an eight hour day or tour, seven days each week, both in the field and in the shop. In the shops where the wage paid for some work is between 80 and 90 cents per hour for the same work bringing from 35 to 50 cents in other industries, the men will continue to work more than the 44-hour maximum. Pay will be based upon a stipulated per-hour rate, plus time and one half for each hour worked in excess of the 44-hour base.

In the field, where the eight hour tour will be sustained, the per-hour wages are correspondingly in excess of the fixed minimum wage, and employees will be paid the same amount per day period as before passage of the law. However, they will be rated on a per-hour basis and will be paid on the basis of one and one half the regular hourly wage for all overtime.

In both these cases, the addition of the amount earned on a basis of 44 hours and the amount earned through overtime, is less than has been received by each employee prior to compliance with the law. As it was not the firm's desire to reduce wages, each employee is given a pay-period bonus equivalent to the difference between the above and the pay-period income he had received prior to the law. On the reverse side of checks issued to employees is the statement to the effect that the check represents 44 hours at the stipulated wage, so many hours at one and one half the stipulated hourly wage for time worked in excess of 44 per week, and a company bonus in the amount of X, totaling the face value of the check.

In summation, there will be very few employees added to payrolls of firms in the Oklahoma-Kansas area. All are now paying in excess of the minimum, and there are very few cases where the normal pay is not 1½ times the minimum. Compliance with the maximum hours clause has created problems, many of which have not yet been solved. One question confronting operators is the application of the law to outlying districts where a pumper may be on duty. In such cases the employee actually works less than the minimum hours, at times only two or three hours per day, but might be said to be on call the entire day. It is pointed out that a majority of operations of this nature would be unprofitable with additional employment, forcing abandonment of continued operation. It is not believed that the entire payroll of the district will be materially increased either by added employees or by wages, if at all.

Pacific Geologists

[*Continued from page 70*]

surface, depending on the amount of oil and gas in the column behind the tubing.

The East Side Coalinga field is a southeast plunging anticlinal fold with relatively continuous plunge to just north of Kettleman Hills where it comes up again to form the Kettleman Hills field. Judging by its two extremities this fold has a relatively steep west flank and a pronounced but more gentle east flank. Both the Kettleman and East Side fields have Temblor production. At Kettleman, this production is primarily controlled by structural closure. In the old East Side field production seems to be a combination of overlap and tar seal. Apparently a considerable portion of the producing horizon is exposed in outcrop. Although this field has produced large volumes of oil.

Since the completion of Gatchell 2, subsequent drilling has shown the Gatchell sand changes entirely to shale within short distances—1800 feet in the case of Tide Water Associated's Guardian 66 and Petroleum Securities' No. 88-12C—and here the change from sand to shale was complete. The sharp change from sand to shale, of course, definitely limits the production in the present sand. The exact trace and nature of this change at the present time is hard to explain. It will remain for many wells to be drilled and considerable stratigraphic work both surface and subsurface before this line is determined.

Santa Susana Thurst Fault, Los Angeles County

By C. E. LEACH and J. C. MAY

The recent Tide Water Associated Oil Company's Porter 1 discovery well has given added information on the Santa Susana fault.

The sinuous trace of the fault extends from the west ridge of Tapo Canyon, easterly to Grapevine Canyon (south of Sierra Madre Mountains) just east of United States Highway 99. Along its course the fault is upthrown on the north side, bringing older beds down over younger beds on the south side. In the vicinity of Tapo Canyon the fault dip appears about 45 degrees; going towards the east the dip flattens. In Browns Canyon, mapping shows the dip to be almost flat to slightly south. Warping or folding of the fault plane is observable, shown by the rapid strike changes. Continuing east from Browns Canyon the fault is covered by alluvium and talus, but in Aliso Canyon (east) the fault plane is again exposed and appears dipping steeply north. A subsidiary fault, called the Aliso fault, occurs north of the Santa Susana fault, which trends in approximately the same direction to the west, dipping north about 45 degrees. In the vicinity of Bull Canyon the fault trace changes abruptly from a southeasterly strike to a northeasterly strike, accompanied by a nearly vertical dip. The rapid change of strike and the steep dip suggests that it might be a "tear" in the Sierra Madre-Santa Susana system. At Grapevine Canyon the Santa Susana fault intersects the Sierra Madre fault which continues easterly along the south front of the Sierra Madre Mountains. Porter 1 is located 7000 feet north of the projected surface trace of the Santa Susana fault. The information gained from the drill on the Santa Susana fault caused a re-interpretation of the old Los Angeles-Ventura Oil Fields Company's well, located south of Porter 1. It is now believed to have crossed the fault about 500 feet, where the log shows a change from brown and dark shale to blue "shale."

Structural Trends Off the California Coast

By FRANCIS P. SHEPARD

The sea bottom off the California coast shows a series of steep escarpments with a dominant trend in a north-northwesterly direction. The Continental slope escarpment follows this direction and is not influenced by the large change in trend found on shore at Point Conception. Many of the submarine escarpments show offsets with the northerly portions set to the northeast. Also a number of the escarpments show slope reversals along their length. Directly outside the Continental slope there are a series of oval mountains with trends in a north northeasterly direction. These are probably volcanoes and from their trends suggest possible tensional phenomena.

Pacific paleontologists elect Wilbur Rankin

Discussion of the interfield subsurface correlations of 13 oil fields in the Los Angeles area, together with the sand-shale percentages of the Repetto formation, was the feature of the annual meeting of Pacific Section of the Society of Economic Paleontologists and Mineralogists, held last Thursday evening in Los Angeles.

Retiring President R. B. Hutcheson of Bakersfield, presided at the meeting with Louis Simons, secretary-treasurer also serving. New officers for the next year were elected with Wilbur Rankin of Continental Oil Company, Los Angeles, the new president, and Miss Lois Martin, Union Oil Company, Los Angeles, secretary.

Kerr heads Mid-Continent Oklahoma-Kansas division

Officers elected at the annual meeting of Kansas-Oklahoma Division of Mid-Continent Oil and Gas Association at Tulsa are as follows: President, Robert S. Kerr, Kerlyn Oil Company, Oklahoma City; First Vice President, Frank O. Prior, Stanolind Oil & Gas Company, Tulsa; Vice President for Western Kansas, T. C. Johnson, Wichita; Vice President for Eastern Kansas, Carl Weiner, Chanute, Kansas; Vice President for Northern Oklahoma, A. W. Ambrose, Cities Service Oil Company, Bartlesville; Vice President for Southern Oklahoma, Lloyd Noble, Noble Drilling Company, Ardmore; Vice President for Western Oklahoma, W. R. Wallace, Magnolia Petroleum Company, Oklahoma City; Secretary-Treasurer, Clarel B. Mapes, Mid-Continent Oil and Gas Association, Tulsa.

North Texas Developments

Hull-Silk test dry in Strawn sand and is going deeper.

K-M-A currently has 74 active drilling operations.

Wichita Falls, Texas. — Production test given The Texas Company's L. F. Wilson 34-A, SWc Section 29, offsetting 3 deep wells in the southeast portion of the Hull-Silk area, Archer County, proved dry in lower Strawn saturated zone at 4376½-80 feet. A small show of oil was logged at 4384-95 feet in deepening with cable tools. It will be carried deeper. This 4300-4400-foot horizon has been more consistent in yielding natural producers than the upper Strawn series, and will be the objective of future tests assigned the pool, which centers upon the depleted Panther shallow field.

Sinclair Prairie Oil Company's J. A. Hood 1, NEc Section 18, 1 mile west of the Hull-Silk deep area, encountered salt water in white lime at 5102-12 feet, and the water level rose after entering the Simpson member of the Ordovician at 5154 feet. Late reports indicated that drilling was in progress at 5175 feet to try for production in the Ellenberger.

The Texas Company's L. K. Johnson 17, southeast portion of the Johnson pool, western Foard County, failed to make a producer in drilling through the Canyon sandy-lime to water at 3807 feet. It is showing small volume of gas with a little oil after plugging back for 80-quart nitro shot at 3706½-3725 feet. The company's 8 Canyon producers in the pool have a rated potential of 1910 barrels daily.

Residue gas from Continental Oil Company's natural gasoline plant in the northwest portion of the K-M-A deep field is due to be returned to the Strawn horizon shortly through an input well now in process of completion. The company's Waggoner Bros. 4-B, NEc Lot 6, BS&F Section 11, A-387, adjacent to the plant, has cemented 6-inch pipe with 200 sacks of cement at 3747 feet to serve as the input well. Oil saturation was cored at 3746-61 feet and 3774-71 feet followed by shale to 3785 feet. The hole has been cemented back to 3761 feet to force the gas into the upper pay.

K-M-A registered 7 new locations the past week, and currently has 74 operations listed, including 23 tests in process of completion. Rotary rigs are also in service on 12 tests that are drilling between the two casing points. Continental Oil Company's Martin 2-B, SWc Lot 4, BS&F Section 11, near its gasoline plant, gauged 44 barrels of 40 gravity oil in 3 hours through ¾-inch choke after 380-quart nitro shot at 3801-82 feet. The gas volume was rated at 245,000 feet daily. The Texas Company's Waggoner Bros. 18-A, Block 35, H. George Survey, flowed 125 barrels in 24 hours through casing after 80-quart nitro shot at 3820-39 feet, then on 3-hour proration gauge flowed 114 barrels oil through ¾-inch choke. Contractor's rig has been skidded one location west to drill Waggoner Bros. 19-A.

NORTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County (Panther-Hull-Silk)—		
J. A. Chapman-Ed. McFarline, Wilson 1, sec 26	1280	4417
Archer County—		
Continental, Gose 41	137	1602
M. & L. Drl. Co., Prideaux 1	75	674
Omohundro et al, Thurman 3, sec 28	175	975
Texas Co., Turbeville 1-L, blk 170	*	1555
Clay County—		
Houston Bowers et al, Shumake 4, sec 4	200	1158
Deaton et al, Bunnenburg 2, blk 34	*	1159
Duncan-Arnhold et al, Duncan 4, sec 14	*	430
Metzner & Burns, Taylor 12, sec 23	180	1130
Taylor 13, sec 23	188	1120
Cooke County—		
Trumter Oil Corp., Stacey 2-B	12	756
Jack County—		
J. V. Coffee & Rochelle, Swasey-Moore 1, sec 2	*	397
Grace & Barrow, Bloodworth 3, sec 1	*	333
Hill & Hill, Jones 1-B	339	3104
Montague County—		
Beck et al, Ivins 1	200	2142
Martin & Hines, King 5	26	1741
Throckmorton County —		
Beacon O&R Co., Hawes 1, sec 979	*	4085
Wichita County (K-M-A)—		
Bolin et al, Preston 3, sec 20	1200	3973
Bridwell Oil Co., Waggoner Bros. 6, blk 18	720	3862
Al Buchanan-Blanco Oil Co., Waggoner Bros. 3, sec 8	1200	3920
Consolidated et al, Ferguson 13, lot 7	1256	3815
Griffin-Martin 2-B, sec 9	624	3995
Continental, Martin 2-B, sec 11	352	3882
Ven-Mex Oil Co. (Texas), Big Wichita River 6-A	1624	3797
Wichita County—		
Bostic et al, G. L. Dobie 6-A, sec 2	6	577
Bridwell Oil Co., Dodson 2, sec 2	*	1675
Hamilton et al, Martin 4-A, sec 36	16	550
Owens Oil Co., Hines 3, sec 11	10	514
Wilbarger County—		
Lawson & Leavell, Waggoner Est. 15-A, sec 109	*	2707
Shaner et al, Waggoner Est. 1-C	*	1900
Young County—		
Gorsuch Oil Co., Matthews 28	12	728
Hanlon-Buchanan, Brooks 1	5	4153
Kleiner-West & H. Y. Oil Co., Langston 63-A, sec 1490	12	559
Knox & Clay, Simmons 1	*	519
Strong et al, E. H. Stocking 1, sec 640	*	3972
Stuckey O&G Co., Hamilton 3-A, sec 3401	175	868
Willis et al, Stewart 6-B	101	847

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PANHANDLE
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Carson County—		
Gulf, E. Cooper 26	155	3041
Gray County—		
Amagray Oil Co., Morse 2-A	42	2640
Gulf, Faulkner 15-A	100	2980
Kewanee Oil Co., Smith-Rest 24	651	3259
Magnolia, Fee 22, lse. 227	398	2848
C. N. Ochiltree et al, Saunders 3	555	3262
S. & M. Oil Co., Worley 4	659	3216
Texas Co., Chapman 9-A	146	2810
Hutchinson County—		
Phillips, Perkins 19	318	3030
Stanolind, Haile 12-B	337	3012
Watkins 8-B	325	2855

*Failures; †Junked; ¶Million cu. ft. gas.

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East Texas Fields

Buffalo gas field edge well is oil producer

Tyler, Texas.—Leon County was added to the list of counties producing oil in the south portion of the Woodbine belt when T. J. Tucker et al's Sam Bane 1, north corner of the Jas. Webb Survey, responded to swabbing with a natural flow of low gravity oil from perforated pipe opposite the upper Woodbine sand logged at 5503-45 feet. It is on the north flank of the Buffalo gas-distillate field, and 1¼ miles north of a gasser completed in 1934. The well was brought in October 29 through tubing choke and produced a large percent of basic sediment for several days. On sustained gauge the flow was rated at 15 barrels of fluid per hour through ¼-inch choke, with B. S. content ranging from 33 to 70 percent and 1 percent water. Pressure on tubing averaged 380 pounds and casing 1100 pounds. The gravity of the oil ranged from 25 to 27 degrees. The gas volume was rated at 150,000 feet daily on choke.

Prolific gas production found in the Woodbine in the Buffalo field was not present in the outpost drilled by Tucker et al. Top of the Woodbine series was logged at 5492 feet, with an elevation of 403 feet, and water was encountered at 5585-5630 feet. Pipe was cemented at 5626 feet, then perforated at two levels before developing oil production.

Humble Oil & Refining Company's M. B. Hill 1, seventh completion for the Navarro Crossing field, northwestern Houston County, gauged 116 barrels of 34.3 gravity oil initial on ¼-inch choke from perforated casing opposite the Woodbine saturated zone at 5880-82 feet. The gas/oil ratio was estimated at 24,600 feet per barrel.

Shelby County well going ahead after blowout

Shreveport, La.—After a gas blowout at 4870 feet in the Glen Rose lime and 1400 sacks of mud preparation was pumped into the hole, Redditt and associates were able to curb the gas flow last week and start coring ahead in Pickering Lumber Company 3, Childers Survey, Shelby County, Texas, Joaquin gas-distillate district. Location is one thousand feet southwest of the nearest of three Glen Rose gas-distillate wells in that field, all owned by Portex Oil Company. Originally planned as a 6500-foot test, it will probably be completed in the Glen Rose.

Plan shallow test in San Augustine County

Shreveport.—In San Augustine County, Texas near Broddus, Drew and associates have assembled a block of 2000 acres for a shallow test to seek the same producing horizon as that at Chireno in Nacogdoches County. East of New Camp in the western part of this county, Republic Production Company's torison balance unit is still working.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
Atlantic, Young 8-F	4500	3798
Georgian Oil Corp., C. Cole 4-B (10-ac)	5000	3799
Humble, Overton First Nat'l Bank 12 (80.6-ac)	8000	3696
Ohio, Moores 49 (200-ac)	1800	3705
Moores 50 (200-ac)	1500	3697
Kilgore Area—		
Devonian-Gulf, Motley 45 (442.1-ac)	4300	3708
Gen'l Crude Oil Co., Howard 12 (40-ac)	8400	3597
Shell, Bates 21 (64.96-ac)	7000	3611
Neal 11 (40.7-ac)	7500	3626
Weaver-Crim Corp., Crim-Reynolds 2, blk 136	1200	3572
Longview Area—		
Atlantic, Satterwhite 14-A (69-ac)	6500	3731
Gen'l American, Sanders 25-A (73.65-ac)	3600	3610
Humble, Lawrence 30 (164.7-ac)	5400	3664
O'Byrne 16-B (104.2-ac)	4200	3682
Shell, Salter 8 (35.4-ac)	7000	3755
Anderson County (Cayuga)—		
Harper & Turner, Barton-Stanolind 4(133.6-ac)	2500	4007
Cherokee County (Lone Star)—		
J. R. Bunn Drl. Co., Bowlin Bros 1.	83	4010
Freestone County (Cayuga)—		
Steward et al, Harwell 1(40-ac)	3000	4019
R. L. Wheelock-J. L. Collins, Harwell 7(203½-ac)	2400	4020
Harwell 10 (203½-ac)	2000	4020
Titis County (Talco)—		
Humble, Galt 11 (80-ac)	281	4249
Marion (Rodessa-Jefferson)—		
Wrather & Lapin, Davis 1, S. Smith sur	300	6056
Sabine (Wildcat)—		
Hugo Allen et al, Brooks 1, Isaac Lowe sur	*	5885

*Failures; †Junked; ¶Million cu. ft. gas.

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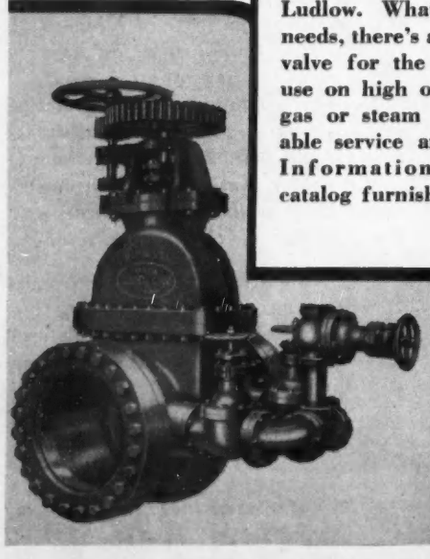

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Southwest Texas Fields

Jackson and Jim Wells counties getting new fields.
New sands for Refugio, Nueces and Jim Wells fields.
New Shattel discovery does but 29 barrels in 6 hours.

New Jackson County field near Francitas

Corpus Christi—Jackson County added another field to its list of 1938 discoveries, bringing the total for the year to three. Other Lower Gulf Coast Counties joined the procession with new sands being opened in Refugio, Nueces, and Jim Wells Counties and another new field indicated for Jim Wells County. Reasonably well controlled acreage, however, should prevent any of the discoveries from bringing about a heavy drilling program.

The Texas Company's J. F. Weed 1, five miles south of Francitas in Jackson County, in the John D. Newell Survey, assures a multiple sand field for this geophysical prospect. The test was carried to 7710 feet, casing landed at 7707 feet and perforated at 7460-65 feet with 14 shots. On a 24-hour gauge, it flowed 89 barrels of 61.5 gravity distillate along with 1,500,000 cubic feet of gas through 11/64 inch choke with 2700 pounds tubing and 2750 pounds casing pressures. Sand was logged 7454-68 feet. The test also had distillate sands at 7071-76 feet and 7625-67 feet. Salt water sand was logged 7667-85 feet. The Frio was topped in this well at 7185 feet, elevation being 20 feet, derrick floor.

Refugio County's discovery was by Rutherford Oil Company's Schirmer 1, Section 1, east of the LaRosa field, which on a 24-hour potential test flowed 169 barrels of pipe line oil through ⅛ inch choke with 1050 pounds working pressure. It had been drilled to 6513 feet, plugged back and was finished through perforations at 6322-26 feet. Prior deepest sand was at 5900 feet. Darby Petroleum Corporation defined the field one mile to the north with abandonment of Rooke 1 at 6503 feet.

A drilling play is underway in the new southwest extension to the McCampbell Field, San Patricio County, following the recent completion of a 7200-foot producer 1 mile from production.

New Agua Dulce Sand

In Nueces County, a gas and distillate producer was completed at 4666-75 feet to open a new and shallower Frio sand pay in the Agua Dulce pool. The discovery was G. P. Shelton's E. H. Sands 1, SW NW NE Section 86, first of a series of wells planned by this operator to provide gas and distillate for a natural gasoline plant under construction.

Jim Wells County, as usual, was in the bright light. Transwestern Oil Company's Dunlap 1, 6000 feet southwest of the East Premont Field, found the regular field sand at 6680-95 feet, but it was hard and carried an oil and gas odor. The test stopped at 6766 feet, set casing at 6652 feet and will be completed in sand section topped 5733 feet. It will establish a second producing level for this field.

About 3½ miles out of the southeast corner of the county and on a geophysical prospect, Shell Petroleum Corporation's C. F. H. Von Blucher 1, Best Survey, perforated at 7327-30 feet and on drill stem test developed 600 pounds pressure in 2½ minutes. It is waiting on orders, but likely will be completed as a gas producer.

First deep test on the main Alice structure in Jim Wells County, is expected as H. H. Howell's Lindsay and Reed 21, on the east side of the Vicksburg production, is drilling ahead below 6215 feet. It missed the 5400-foot pay and failed in the regular sand.

The test likely will test a zone around 7200 feet, which Howell discovered in a test southwest of the field. It was believed to be in the Cockfield at this level.

Texas Gulf Producing Company's Smith and Gardner 2, failed to find the newly discovered 5400-foot sand, drilled to 5618 feet, set 7-inch casing and will perforate in zone at 5211-23 feet, where the test showed for a producer on drill stem test. This sand has been logged in a number of wells, but no producers have been completed in it to date.

Magnolia Petroleum Company's R. V. De Garcia 1, 1126 feet east of the discovery well and second test to be drilled in the Bandera Field, also in Jim Wells County, was completed through perforations in the regular sand at 6421-36 feet. It had been carried to 8302 feet.

Pure Oil Company's State of Texas 1, State Tract 522, and near Bird Islands in Laguna Madre, Kleberg County, was at 9636 feet, waiting on cement. Reports are that a string of 7-inch casing had been set on bottom.

Shattel discovery well proves small producer

San Antonio.—Humble Oil & Refining Company's Schley 1, discovery well at Shattel in Frio County, has proved to be a very small producer and may be acidized before final completion. A series of pumping tests have been made, the well pumping off its head in several hours. The last gauge was 29 barrels in six hours before going off production. The well is bottomed at 5309 feet with hole plugged back to 4800 feet in the Austin Chalk. The company is below 4400 feet in Marrs McLean 1, 1713 feet to the north, and should have the chalk over the week end.

Teas, Ashley and Hinton's Grizzard 1, nine miles south of Smithville in Bastrop County, is testing after drilling plugs. It is bottomed at 7117 feet with 4¾ inch pipe set at 7152 feet.

Deepened to 2338 feet, eight inches in Edwards limestone, Tinkle's Blackwell 2, wildcat southwest of Branyon Field, Caldwell County, is pumping several barrels of oil and some water per hour .

The Hill Country, or Lower Edwards Plateau, is gaining considerable interest. Plateau Oil Company's Hunter 1, 4822 feet north of the discovery of Junction pool, Kimble County, is drilling plugs after being carried to 1800 feet. Pipe was set at 1765 feet.

A two-well drilling deal, which will bring about further exploration of the Love Ranch prospect, has been made. Howell and Hart and Sons have rigged up the old Jeff Love 5-E, Section 1594, Kerr County, and are preparing to deepen several feet below 5625 feet, then set casing and acidize. The well topped the Ordovician at 5413 feet and has several good oil showings. It also had an oil showing at 3520-30 feet, where a producer was indicated.

Dutch Wardlow's Fee 1 on the Standard Ranch in Kinney County, is bailing with some oil and gas showing at 1290 feet. Casing is set at 890 feet and hole has been cleaned out to within 150 feet of bottom.

McAllen structure gets second sand

Mission.—Second well on the McAllen structure in Hidalgo County, is a gasser spraying distillate and opens a new sand for this Frio producing area. R. E. Harding et al's E. M. Card 1, Lot 8, Block 8, Hidalgo Canal Company Subdivision, and just east of the McAllen townsite, is at 7507 feet, estimated at 5,500,000 cubic feet of gas and a spray of 55.7 gravity distillate per day through ⅜-inch choke. Pressure was 1750 pounds on tubing with casing sealed. The test when first completed had a bottom hole pressure of 4200 pounds, but this quickly dropped to 2700 pounds, possibly due to the tight, hard sand. The well is producing through perforations at 7440-65 feet, where 40 shots were made. Plans are to reshoot in the same level with a like number of shots.

Phillips Petroleum Company recently acquired an option on 15,000 acres from Harding and associates, together with the discovery well and the present producer. In addition, many thousands of dollars worth of scattered leases have been acquired by the Phillips concern, which apparently is planning an extensive development program. It is intimated that the company is attempting to establish sufficient distillate reserves in the Rio Grande Valley to warrant construction of a gasoline unit, although such information is purely in the rumor stage.

Phillips is carrying its deep test in the Samfordyce field ahead below 9300 feet, deepest test in that portion of the Rio Grande Valley.

Union Producing Company is still working on American Rio Grande Land and Irrigation Company 11, deepest test in the Mercedes field, also in Hidalgo County. The well flowed several barrels of fluid, including 22.7 gravity oil and some water through ⅜-inch choke under 250 pounds working pressure after perforating at 8080-85 feet. This is

the first low gravity production to be found in the deep basin, other oils being of a distillate nature.

Sun Oil Company's exploration in the new Sun area, Starr County, continues to maintain prime interest. Olivarez 1, ¾-mile northwest of the discovery, after drilling out plugs at 5242 feet, picked up another sand to 5266 feet and was testing. Speer 1, one mile southwest of production, was coring near 6000 feet, finding only salt water sands above. Circle Oil Company was below 4000 feet in Olivares 1, ¾-mile north of the discovery. Still farther north and 3732 feet north of the discovery of the Kelsey pool, Jim Hogg County, Humble Oil & Refining Company's Bass 3, was near 4000 feet and likely would be ready to core the sand over the week-end.

SOUTH TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
SAN ANTONIO DISTRICT		
Bexar County—		
Crooks, Blandford 1, Navarro sur..	*	1604
Johnston, Brown 1, Christopher sur	¶¼	1375
Philtop, Patton 3, Rodriguez sur..	118	1114½
Caldwell County—		
Martell, Gray 2 (Salt Flats).....	200	2468
Robinson & Coffield, Young 4 (Branyon)	20	2348
Gaudalupe County—		
Freeman, Wilson 1-A, Darst Creek	768	2576
CORPUS CHRISTI DISTRICT		
Bee County—		
Mayo, Bunn & Chapman, Sparkman 1	*	4210
Calhoun County—		
Sinclair Prairie, Bennett 17, Heyser	750	5605
DeWitt County—		
Hines, Boothe 1, Swindel sur.....	*	3721
Hidalgo County—		
Dean, Shelson 1, Samfordyce (perf 2925-35 ft)	250	3005
Jackson County—		
Lewis, Drushel 1, Cordelle	350	2668
Jim Wells County—		
Buchanan & Blanco, Rattan 4, Alice	800	5304
Howell, Stilwell 2-A, Alice.....	750	5310
Magnolia, Seeligson 10, East Premont (perf 6132-38 ft).....	350	6602
Presnall & Tsesmelis, Hoffman 1, Los Presenas gr	*	6012
Southern Minerals, Stillwell 1, Alice	600	5452
Neuces County—		
Andrade, Dunn 4, Turkey Creek....	500	4122
Phillips, Fenner 1, Turkey Creek..	*	6037
Refugio County—		
Copano, O'Connor 33-B, Tomoconnor	1250	5898
O'Connor 35-B, Tomoconnor 1500		5836
Darby, Rooke 1, Cobian sur.....	*	6503
Hewit & Dougherty, Lambert 80, Tomoconnor	1250	5890
Quintana, Heard 27, Tomoconnor...2800		5925
Williams 2, Tomoconnor 2900		5926
Wyrick, Ryals 1-B, Refugio (perf 5456-60 ft)	300	6790
Victoria County—		
Echols, Bennett 14, Heyser.....	750	5197
LAREDO DISTRICT		
Duval County—		
Arkansas, Wolf 4, N. Sweden.....	500	5393
Benedum-Trees, Puig 19, North Sweden	650	4811
Buchanan, Duval Ranch 9, Eagle Hill	143	1530
Duval Ranch 10, Eagle Hill.....	154	1514
Continental, Collings 3, Hoffman..	325	2807
Driscoll 28-A, Driscoll.....	625	3361
Cox & Hamon & Gorman-Yoakam, Cuellar-Points 12, Hoffman.....	55	2577
Cuellar 50, Hoffman.....	50	2582
Cuellar-Points 11, Hoffman.....	52	2593
Hoffman (Bascum) 1, Hoffman..	36	2744
Hoffman (Fair) 3, Hoffman.....	47	2764
Hiawatha, Parr 18, North Sweden..	350	5483
Magnolia, Duval Ranch 1, sec 189..	*	2646
Duval Ranch 2, Casa Blanca....	¶5	1200
Weil 18, Hoffman.....	225	2550
Massingill & Moore, Duval Ranch 1, Charamousca	*	1603
McAlester, Mew 2, Fitzsimmons..	500	4382
Porter & Wheelock & Collins, Clara Driscoll 5, Fitzsimmons.....	*	4465
Taylor, Afflerback 1, sec 342.....	*	1123
Texas, Meek 4, Seven Sisters.....	58	2685
Jim Hogg County		
Goldston & Fox, Canales 1, Hinojosa sur	*	6017
McMullen County—		
Jones, Ezzell 41, Ezzell.....	*	1562
Marion, Lark 8, Calliham	*	1069
Starr County—		
Senisa, Salinas 1, A. C. Salinas gr..	*	1808

*Failures; †Junked; ¶Million cu. ft. gas.

Texas Gulf Coast

Gas-distillate show in Montgomery County wildcat test. Fairbanks northeast well making gas and distillate.

Houston.—Four miles northwest of the town of Conroe, Montgomery County, Housh & Thompson's Clary 1, W. S. Allen Survey, created excitement last week when a sand with a gas and distillate show was logged in Cockfield formation. At the end of the week the well was drilling below 4708 feet and had logged water sands from 4652 to 4658 feet. An 11-minute drill-stem test from 4514 to 4552 feet and recovered 15 feet of gas-cut mud with trace of distillate. Pressure was 650 pounds through ¼-inch chokes. On another drill-stem test from 4545 to 4552 feet the testing tool failed to open and when pulled recovered 420 feet of salt water, and showed no pressure. Clary 1 was cored as follows: from 4486 to 4496 feet, sandy shale; 4496 to 4506 feet, sandy shale; 4506 to 4516 feet, shale; 4516 to 4626 feet, shale; 4536 to 4545 feet, sand with a gas and distillate show; 4545 to 4552 feet, 2½ feet of sand showing oil; 4555 to 4558 feet, salt water sand. Top of the Cockfield was logged at 4490 feet. Contract calls for 300 feet in the Cockfield and it is believed that the operators will core ahead to the Lower Cockfield before abandoning.

Seven miles southwest of Conroe, Mills Bennett abandoned Llewellyn & Foster 1, A. Hodge Survey, Montgomery County, at 8751 feet in salt water sand topped at 8700 feet. The water was also cored from 8724 to 8732 feet. Up the hole salt water sands were encountered at 5171 feet and 5300 feet.

Over a half mile southwest of production at Eureka, Harris County, Tide Wter Associated Oil Company recovered salt water on a test in Ford 1, J. R. Reinerman Survey. Casing was perforated from 7762 to 7768 feet with 24 shots.

Fairbanks Distillate Producer

North of Stanolind Oil & Gas Company's Look 1, which extended production at Fairbanks east some time ago, Sinclair Refining Company was completing Goodykoontz 1, W. S. Powell Survey, as a gas and distillate producer. Casing was perforated for 30 shots from 6948 to 6952 feet and the well came in flowing gas and distillate through a ⅜-inch choke with a tubing pressure of 2000 pounds and a casing pressure of 2500 pounds.

The first failure for the Highlands prospect, Harris County, is Jack Frazier & Bunte's Lang 1, R. White Survey, Abstract 84, abandoned at 5514 feet. The operator has three other locations in the district. Two of the other wildcats are now drilling.

On the southeast flank of West Columbia, Brazoria County, General Crude Oil Company's Campbell Estate 1, J. H. Bell Survey, cored salt water sand last week at 5667 feet. The hole was down to 5763 feet in shale at the close of the week.

Humble Oil & Refining Company has spudded a wildcat on the Iowa Colony prospect, Brazoria County. Tuttle 1 is one mile southeast of Normandie Oil Corporation's Ramsey 1 which was abandoned at 6911 feet. It is 570 feet from the north line and 420 feet from the east line of a 23.4-acre tract composed of lots 51 and 52 in the HT&B Section 67.

North of production at Old Ocean, Brazoria County, John H. Blaffer has spudded S. M. Patterson et al 1, Polly & Chance Survey. The well is projected to 10,500 feet.

Southeast of production at Manvel, Brazoria County, The Texas Company abandoned E. Davis 1, T. Spraggins Survey, at 6647 feet after failing to find production in Frio formation.

On the West Cotton Lake prospect, Chambers County, F. A. Gillispie is jetting Kirby Petroleum Company 1, Chambers County School Land Survey, with gas after perforating from 6388 to 6400. The hole was washed with oil, swabbed and washed and would not flow. The wildcat was tested some time ago when casing was perforated from 6415 to 6434 feet. It made some gas and oil and then started making salt water.

Standard Oil Company of Texas is completing another well at Cedar Point, in Galveston Bay, Chambers County, State 5-118 made 103 barrels in 4 hours through a ¼-inch choke. Tubing pressure was 1,000 pounds and casing was sealed. State 5-118 was bottomed at 6000 feet in oil sand and 7-inch casing was set at 5958 feet South of production at Turtle Bay, Chambers County, Stanolind Oil & Gas Companys' State 1-38 was drilling in shale at 6701 feet and is below the established producing horizon found in the proven area.

Spindle Top

West of production at the oldest producing field in the Gulf Coast, Spindle Top, Jefferson County, British American Oil Company and Merit Oil Company's Gladys City 1, J. A. Veatch Survey, was coring below 6730 feet in shale last week after coring salt water sand around 6420 feet. The well is in the Frio formation.

South of the discovery well at Cheek, Jefferson County, Shell Petroleum Corporation is completing Ed Pleasant 1, C. Hillbrandt Survey after perforating from 7718 to 7722 feet. The well is flowing an estimated 610 barrels of fluid daily, 50 percent oil and 50 percent salt water, through ⅛-inch choke with a tubing pressure of 1600 pounds and a casing pressure of 2875 pounds. On an 8/64-inch choke the well made 91 barrels of 39 gravity oil and 91 barrels of salt water in 24 hours. Tubing pressure was 1575 pounds and casing pressure was 2875 pounds.

Shell Petroleum Corporation was preparing to make a test on McFaddin 3 at Clam Lake at the end of the week. The Jefferson County well is waiting on cement after running 7-inch casing to below 6057 feet. Sands from 5997 to 6018 feet will be tested.

In the Hungerford area, Wharton County, Humble Oil & Refining Company probably will attempt to find production in Wilcox formation in Duncan 1, A. Edgar Survey. The hole is bottomed at 7495 feet and casing set at 7375 feet. East of Louise,

the company abandoned Hancock 1, L. L. Miller Survey, at 5685 feet.

The second well at North Markham, Ohio Oil Company's Carlson 1, north offset to the discovery well, I&GN Section 2, Matagorda County was making a drill-stem test from 7720 to 7729 feet. The hole is bottomed at 7729 feet and sand showing oil was cored from 7702 to 7705 feet and from 7722 to 7726 feet. A 15-minute drill stem test from 7702 to 7729 feet showed 4660 feet of 34.5 gravity oil, 85 pounds pressure and 30 feet of salt water through ¼-inch chokes.

Carroll Oil Company has made location for a wildcat at Pearland, Brazoria County. Norma Means 1 is in the center of lot 14 in the Thomas Green Survey. It is about 3400 feet north and 63 degrees east of Albert Blummer's dry hole. This wildcat will be watched with much interest as it is in an area which has a sand section of over 700 feet. Other wells drilled in this area cored the sand and showed salt water. However, the dry wildcats were high structurally and are believed to be on the down through side of a fault.

TEXAS GULF COAST

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Anahuac—		
Humble, Shaver 6	151	7130
Clear Lake—		
West Prod., Fee 1-B	*	5941
Dickinson—		
Coast Pet. Corp., M. Stewart 11	720	8812
J. K. Hughes, Ecret 4	649	8958
Pure, Shelor A-4	860	8122
Fairbanks—		
Amerada-Stanolind, Day 3	585	6857
Emmott 1	720	6845
Pastusek 1	611	6853
Bridwell Oil Co., Gibson 2	125	6855
Friendswood—		
Humble, Grey 14	589	6040
Herman Hospital 4	605	6046
Hardin—		
Humble, Chambers 4	485	7565
Hastings—		
Walter Goldston, Fee 3	618	6093
Stanolind, Moore C-11	458	6080
Shaw 11	548	5965
Hitchcock—		
M. Stewart, Fee 8	*	5183
Manvel—		
Texas Co., Belcher B-27	172	5135
Davis 1	*	6647
Orange—		
Gulf, Chesson 17	240	5571
Pickett Ridge—		
Texas Co., Trustos 2	*	4606
Pierce Junction—		
Hamil & Smith, Gulf Fee 3	240	4484
Segno—		
J. K. Dorrance, Wing 4	335	8332
Gulf, Wing 14	666	8119
South Cotton Lake—		
Humble, Lawrence C-1	144	6524
Spindletop—		
Stanolind, Gladys City 1-2	313	3275
Spurger—		
Republic, Fee 13	549	7700
Thompsons—		
Humble, A. P. George A-X-5	*	3755
Tomball—		
Humble, Martens 4	432	5562
Quilter B-13	¶1	5580
Chambers County—		
Salt Dome, Ogden 1, s of Anahuac, E. Douthit sur	¶1½	7525
Harris County—		
Jack Frazier, Lang 1, Highlands area, R. White sur	*	5514
Madison County—		
W. E. Holleman, Cannon Heirs 1	*	1740
Trinity County—		
Max V. Scott, First National Bank of Trinity, s of Trinity, W. Beasley sur	*	2505
Wharton County—		
Humble, Hancock 1, e of Louise, L. L. Miller sur	*	5685

*Failures; †Junked; ¶Million cu. ft. gas.

South Louisiana

Distillate flow opens new production in Cameron Parish. Shallow sand makes Venice a twin-well drilling area.

Lake Charles.—Humble Oil & Refining Company discovered a new gas and distillate producing area in South Louisiana last week when Hanszen 2, Chalkley area, Section 9-12s-6w, Cameron Parish, came in flowing from perforations at 8562 to 8568 feet. The well made 32 barrels of high-gravity distillate and 2,500,000 cubic feet of gas daily through a 3/16-inch choke. Tubing pressure was 3000 pounds. The hole was drilled to 11,693 feet; 20-inch casing was set at 218 feet, 13⅜-inch at 2703 feet and 9⅝-inch at 8664 feet.

The above wildcat is the second drilled by Humble Oil & Refining Company in the Chalkley area. The first well on the Hanszen lease was abandoned at 9628 feet in 1937, having cored gas sands at 8638 to 8656 feet and at 8588 to 8591 feet, and salt water sand at 9580 feet. Shell Petroleum Corporation made location for a test on the Hanszen lease but did not drill. The Chalkley area has been worked with torsion balance and reflection seismograph by Humble Oil & Refining Company, Gulf Oil Corporation and Shell Petroleum Corporation. Humble Oil & Refining Company is the major lease holder in the area, having over 7000 acres. Other lease holders are Sun Oil Company, Harrison & Abercrombie, Gulf Oil Corporation, Shell Petroleum Corporation and Stanolind Oil & Gas Company.

Shallow Sand at Venice

Ninety-one feet of new oil sand was cored last week in Tide Water Associated Oil Company's Buras Levee Board 2 at Venice, Plaquemines Parish. The sand was logged from 3540 to 3631 feet and after running electric log, 7-inch casing was set at 3619 feet. This shallow sand was cored in Buras Levee Board 1 some time ago but the well was carried deeper. After coring the shallow sand it was decided to drill twin wells at Venice. Buras Levee Board 2 will be the first well to produce from the new sand.

The first wildcat failure for the La-Place prospect, St. John The Baptiste Parish, is Shell Petroleum Corporation's Godchaux Sugars 1, Section 97-11s-7e. The hole was drilled to 11,005 feet in shale. It was plugged back and several tests were made the last being at 8404 feet. It showed 3 barrels of salty mud and 22 barrels of salt water. No pressure was shown. Broken shows of oil were had around 8411 feet, 8700 feet, 8900 feet and 10,480 feet. None of the formations were thick enough to make a commercial well.

Humble Oil & Refining Company is preparing to drill a deep flank test on the old Bayou De Glaise salt dome in Iberville Parish. Location has been made for Wilbert 1, 1750 feet north of the south line and 2000 feet east of the west line of Section 78-18s-8e. Salt has been encountered on the dome around 3697 feet and the deepest well ever drilled on this prospect was Standard Oil Company of Louisiana's Wilbert 8, dry at 4295 feet, in 1931.

On the Golden Meadows prospect, Lafourche Parish, The Texas Company is preparing to make another test on LaTerre 1, Section 1-20s-21e. The hole has been plugged back to 8600 feet and cement has been drilled out to 8616 feet. Casing will be perforated from 9830 to 9880 feet. Prior to plugging back, a test from 9975 to 10,005 feet recovered 180 feet of distillate. The hole originally was drilled to 11,135 feet.

Shell Petroleum Corporation is preparing to make a test on Peters 1, South of Houma, Terrebonne Parish, after drilling to 11,047 feet where drill pipe was stuck. The hole has been plugged back to 10,409 feet where at the end of the week the well was shut down waiting on cement to set. A drill-stem test on the wildcat at 10,948 feet showed 75 stands of salt water.

Atlantic Refining Company has made a second location at the new North Tepetate field, Acadia Parish. Klumpp 2 is 330 feet north and 330 feet west of SEc SW 12-7s-2w. It is 1980 feet east and 650 feet south of the discovery well.

Humble Oil & Refining Company is preparing to complete another well at North Crowley, Acadia Parish, in the shallow sand. J. B. Stakes 1 topped the oil sand at 7184 feet and is bottomed in oil sand at 7196 feet. Seven-inch casing was set on top of the sand.

The second failure for Lunita, Calcasieu Parish, is Sun Oil Company's Lutcher Moore Lumber Company 2, Section 6-8s-12w, abandoned at 8951 feet.

Two new oil wells are being completed at Bancroft, Beauregard Parish, by Republic Production Company. Lutcher-Moore 2 came in flowing oil and gas last week from 7297 feet but was killed because of a high gas/oil

SOUTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Four Isle—		
Texas Co., State 10	*	9844
Gibson—		
Shell, Kuntz 1, dr to 10,752 ft, pb and comp	168	8888
Jennings—		
Frio Pet. Corp., Gulf Fee 2	400	6953
Iowa Jennings 2	*	5550
L. & L. Oil Co., Houssiere Latrielle 3	100	1841
Superior, Jennings Heywood 8	653	6761
Villa Platte—		
Continental, H. Haas 2	384	9045
F. Tate 2	368	9078
Calcasieu Parish—		
Sun, Lutcher Moore 2, Luntia area, 12-8s-13w	*	8951
St. John The Baptiste Parish—		
Shell, Godchaux 1, LaPlace area, 97-11s-7e	*	11,500

*Failures; †Junked; ¶Million cu. ft. gas.

ratio. The well was drilled to 7297 feet in oil sand, topped at 7260 feet. Seven-inch casing was set at 7297 feet and perforated with 10 holes from 7263 to 7275 feet. Columbia Land & Timber Company 2 is preparing to perforate from 7280 to 7290 feet. Oil sand was cored from 7256 to 7370 feet.

In the Mistic area, Beauregard Parish, Republic Production Company's Lutcher-Moore 1-A, Section 14-7s-12w, was drilling in sandy shale at 8697 feet last week and is reported to be having trouble with gas around 7500 feet.

The Texas Company has completed its second well at Jefferson Island field, Iberia Parish, in a new oil sand. State Lake Peigneur 1 was perforated with 31 holes from 7827 to 7837 feet and came in flowing 252 barrels daily through 10/64-inch choke. Tubing pressure was 1200 pounds. The well was also making 667 cubic feet of gas with each barrel of 34.2 gravity oil.

At Charenton, St. Mary Parish, Pan American Production Company discovered a new producing horizon when Veeder 10 made a drill-stem test from 1654 to 1668 feet in sand showing oil and recovered 30 feet of oil and gas-cut mud.

The Texas Company has opened a new deep gas and distillate sand at Lake Barre field, Terrebonne Parish. The company's State Lake Barre 42 was perforated with 154 shots from 10,460 to 10,520 feet and a drill-stem test made through quarter-inch chokes. The well flowed at the rate of 65 barrels of distillate daily with a 900-pound pressure. Eighty-five feet of screen and 2½-inch tubing was set. At the end of the week testing was being continued.

COMPREHENSIVE INDEX

of the

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By

DAISY WINIFRED HEATH

A.A.P.G. PUBLICATIONS INDEXED

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Structure of Typical American Oil Fields, Volume II	**1929**
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THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

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Tulsa, Oklahoma, U.S.A.

North Louisiana Fields

Indicated extension of Shreveport production southeast. Two tests in old Caddo field propose to go to 6000 feet.

Shreveport.—A 1¼ mile southeast extension of the basal Glen Rose lime (Pettit) horizon of the new Shreveport oil field appeared assured last week after R. L. Bauman's Slattery 1, C NW NW 35-18n-14w, Caddo Parish, logged 20 feet of saturated lime and was preparing to perforate 7-inch casing set on bottom at 5596 feet. With elevation of 172 feet this test logged massive anhydrite from 4331 to 4593 feet, logged the Jeter sand of the Glen Rose at 4795 feet and in cores from 4800 to 4838 feet sand with gas and salt water. Top of the Pettit was 5541 feet.

Five miles south of the two oil wells and the lone gas-distillate well in the field, all in Sections 27 and 28-18n-14w, Hollywood Oil Corporation's C & B Realty Company 1, NE NE 22-17n-14w, Caddo Parish, that failed to find production in the Pettit or upper Travis Peak and plugged back to test the Glen Rose horizon that produce at Rodessa, showed 4600 feet of salt water in a 1-hour drill stem test with ¼-inch chokes at top and bottom after casing was perforated from 4854 to 4965 feet in what corresponds to the Young horizon at Rodessa. Operators plan to test the Dees, Gloyd and Hill horizons in the order named before abandonment.

Rodessa Oil & Refining Corporation's Chandler 1, C SW NE 34-18n-14w, which blew out in the Tokio at 2420 feet making 10 to 15 million feet of gas daily, was drilling below 4675 feet after logging massive anhydrite from 4331 to 4603 feet; elevation is 171 feet. C. D. Loe's Lionel Meyer 1, SE SW SE 33-18n-14w, was drilling below 5300 feet.

Four miles south of a recently abandoned test in Section 37-17n-13w, Arkansas Fuel Oil Company has set surface casing in F. F. Webb 1, C NW SW 4-16n-13w, Caddo Parish. It is a 6000-foot test near Lucas.

Union Producing Company will start a 9000-foot test, Woodard-Walker 1, in SE 30-18n-8w, Webster Parish, Dubberly-Sibley district, before November 14, under terms of the purchase of several thousand acres of leases from J. P. Evans of Shreveport. Evans has been unitizing these leases for several months preparatory to consummation of the transfer. The leases were placed on record last week. Besides a cash consideration Evans gets a payment from ¾ of ⅞ of production with a 1/16th over-riding royalty on all crude oil and liquid hydrocarbons produced, and ¼ cent per thousand cubic feet of all gas produced. There are at present three gas-distillate wells producing from the 5500 foot Glen Rose horizon in this field, discovered by Evans.

E. T. Oakes and associates' E. C. Kilgore 2, NW SE 28-21n-5w, Claiborne Parish, 1¼ miles northwest of Lisbon production, Claiborne Parish, had to recement split casing last week, after the well flowed several hours at estimated rate of 40 to 50 barrels per hour through choke after acid treatment, having flowed 20 barrels per hour before acidization. The test, with total depth of 5317 feet logged 9 feet of saturated basal Glen Rose lime. On the south edge of the Lisbon field, ¼ mile south and east of production, Magnolia Petroleum Company's Patton Estate B-1, NE NW 13-20n-5w, set final casing string at 5389 feet after logging 12 feet of saturated lime. Total depth is 5407 feet.

Continental Oil Company last week cemented surface casing at 528 feet in its second test on its large wildcat block in Madison Parish, where its first test found a salt dome at 4196 feet. Present test is Singer Manufacturing Company 2, C 2-15n-11e.

Arkansas-Louisiana Gas Company's Davis Lumber Company B-1, SW NW SW 7-16n-4w, Bienville Parish, Driscoll gas-distillate field, which has not had a test in several months, showed estimated 50 to 55 million cubic feet of gas on drill-stem test from 5844 to 5876 feet, and then showed salt water at 6203 feet, is drilling ahead below 6408 feet.

Two 6000-foot tests for the old Caddo field, Caddo Parish, were started last week. H. C. Production Company made location for Kinnebew & Ratcliff 1, located 2112 feet west and 1136 feet north SEc 5-19n-16w, and Colonial Corporation is ready to spud Thigpen & Herold 1, NE SW 34-22n-16w.

The Cotton Valley field's lower Marine sections, which during the last week, added one gas-distillate well, had three tests on the south flank at critical depths in the lower Marine. Mid-

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bossier (Bellevue)—		
Premier Inv. Co., Wyche 45, 14-19n-11w	25	398
Bossier (Sligo)—		
Triangle Dr. Co., Schuler B-1, 13-17n-12w	125	3141
Caddo (Pine Island)—		
W. D. Chew, Stiles 5, 27-21n-16w..	*	1968
Falcon Oil Co., Glassell-Youree 2, 26-20n-15w	5	2306
G. W. Gibson, Muslow Co. 2, 6-20n-15w	25	1575
Caddo (Dixie)—		
J. E. Sedberry, Dickinson A-1, 10-19n-14w	*	2410
Caddo (Shreveport)—		
Oils, Inc., Cazaux 1, 16-16n-13w....	*	3502
La Salle (Urania)—		
F. W. Henslee, Urania 3, 7-10n-2e	15	1542
Sabine (Zwolle)—		
W. D. Ambrose, Sabine 1, 33-8n-13w	*	2530
Richards & Holloway, Long-Bell 1, 15-7n-13w	*	2392
Union (Monroe)—		
Union Prod. Co., Fee 2 No. 68, 6-20n-4e	¶6¾	2175
Union Parish Sch. Bd. 2, 16-21n-4e	¶9	2154
Webster (Cotton Valley)—		
H. L. Hunt, Hope 20, 24-21n-10w..	456	8474

*Failures; †Junked; ¶Million cu. ft. gas.

States Oil Corporation's Welori Lumber Company 1, South half NE NW 3-20n-10w, was coring at 8491 feet after topping the "B" sand of the lower Marine at 8444 feet; elevation 245 feet. Oliphant Oil Company's Stewart B-1, NW NE 5-20n-10w, logged the "D" sand with a show of oil at 8658-78 feet, and was coring black shale and lime at 8864 feet after topping the "E" or Bodcaw sand at 8748 feet; elevation is 239 feet. H. L. Hunt's Sandifer 1, C NE NE 4-20n-10w, has set 7-inch casing on bottom at 8720 feet, after logging the "D" sand at 8534-56 feet; elevation is 249 feet.

Arkansas Fields

Third oil well completed in Magnolia field

El Dorado, Ark.—Completion of the Magnolia (Kerr-Lynn) field's third Permian lime oil producer, in Columbia County, and indications of a north extension of the Miller County end of Rodessa featured developments last week in Arkansas.

The new producer, which logged 137 feet of oil saturation and 33 feet of gas-distillate saturation in the Permian, was completed at 7522 feet, flowing 230 barrels of net oil with a small amount of wash water, through ¼-inch choke in 13 hours. Tubing pressure was 1400 pounds and casing, 1500 pounds. The test is Grady H. Vaughn's Levi Garrett 1, SE SE 14-17-20. After flowing 13 hours it ceased to flow but later was revived. Plug was drilled with bit on end of the tubing and the well started flowing after washing only 15 minutes. Seven-inch casing was cemented at 7500 feet. This test is a south offset to the same operator's Nan Garrett 1, second oil well in the field. Atlantic Refining Company's Levi Garrett 1, C NW SW 13-17-20, an east offset to Vaughn's Nan Garrett 1, was coring below 7523 feet.

The half-mile north extension of the Miller County part of Rodessa, which has been rather quiescent recently, is F. W. Martin & Company's Watts 1, SE SW NE 2-20-28, which logged porous lime section with saturation from 6222 to 6250 feet. Total depth is 6252 feet; elevation is 321 feet. Anhydrite was topped at 5360 feet.

Standard Oil Company of Louisiana's J. L. Warren 2, Section 8-16-22, Columbia County, is the Buckner field's first pumping well. This test completed several weeks ago later ceased to flow and repeated acid treatments were given. Last week it was standardized and on first 15-hour gauge pumped 227 barrels, later averaging 15 barrels per hour. Buckner produces from the Permian lime at 7200 feet. It was the field's eighth oil well, all owned by Standard Oil Company of Louisiana.

El Dorado, Ark.—Three drilling permits were authorized last week by the Arkansas Board of Conservation, as follows: Nevada County—Texas Canadian Oil Corporation, J. N. Stocks 2, located 75 feet north and 75 feet west SEc NW SW SE 9-15-22; Union County—Lion Oil Refining Company, Marcus 6, C Lot 3 SW 18-18-17; Mayfield 7, C Lot 2 NW 18-18-17.

Arkansas proration hearing at El Dorado November 9

The Arkansas Board of Conservation will hold a statewide proration hearing at El Dorado at 9 a.m. November 12 for hearing recommendations for December allowables. Owners of wells in the Miller County end of Rodessa will be asked especially to present evidence for setting new rules and regulations governing the 32 Gloyd sand producers in that area.

Moving equipment pictures at Houston show

As a further means of presenting engineering data to the industry and give the exhibitor a better opportunity for showing field application of equipment, Ed Lenzner, general manager, has announced that continuous moving pictures of tools and machinery in operation will be given during the entire week of the Oil-World Exposition which will be held in Houston from April 24 to 29, 1939, inclusive. These picture showings will be open to all visitors at the Oil Show and will be given in a room adjacent to the exhibiting space in the Coliseum. The reels shown will be in addition to any presented at the individual booth of the exhibitors.

An added feature of this moving picture presentation will be that all reels will be scheduled for specified hours during the day. This will enable any exhibitor having pictures to be run off to invite oil men to see his particular reels. Field and plant operations to be covered will include drilling, production, pipe line, natural gasoline manufacture, refining and transportation. Manufacturing processes of an unusual nature will also be portrayed and laboratory work relative to both field operations and equipment developed will be shown to give the visitor an idea of the type of research that is being done to advance field methods and equipment design.

Pictures of a more general nature showing the use and application of American equipment to foreign operations will give the visitor an idea as to the widespread distribution of American tools and machinery throughout the world. These reels will be furnished both by exhibitors who have had their representatives take them while on trips to foreign countries and by oil companies with holdings outside the United States.

The entertainment features, such as the oil men's banquet, are being arranged by the Entertainment Committee which has been appointed recently.

SOUTHEASTERN STATES
Completions

MISSISSIPPI

Company, Well and Location	Init. Prod. Bbls.	Depth
Wilkinson (Wildcat)—		
Louisiana Crusader Oil Co., Miss-Wis. L&T Co. 2, 35-4n-1w.....	•	3618
Yalabousha (Wildcat)—		
Acme Holding Co., Boyle 1, 33-25n-7e	•	2835

•Failures; †Junked; ¶Million cu. ft. gas.

Coffee?

"Furriners" smile at the rite we make of coffee drinking down here in Old Louisiana, not to mention East Texas and South Arkansas. But if you ever find us too busy to have a cup of coffee with a customer, set us down as slipping! What's business without friends? However—don't subscribe to the fallacious idea that you can get slow-motion pictures of The PELCO Gang with an ordinary newsreel camera.

PELICAN WELL TOOL & SUPPLY CO.

SHREVEPORT LOUISIANA

Lake Charles—Houma—Converse
New Iberia—Monroe
Cotton Valley—Greggton
Magnolia—Houston

California Fields

Another oil field for San Joaquin Valley is indicated.

New Los Angeles well believed on separate structure.

Los Angeles.—Possibility of another oil field on the floor of San Joaquin Valley was indicated in the showing last week of The Ohio Oil Company's KCL F-1, Section 10-31-25, Kern County. Casing is being set for a production test of 200 feet of oil sand. Bottom of the hole is at 9280 feet. Location is northeast of Buena Vista Lake and southeast of Buena Vista Hills field. It is in the center of a triangle made by Ten Sections, Elks Hill and Buena Vista gas field, being equally distant from those three fields. Location was made following seismograph and the strike is the sixth so indicated in the San Joaquin Valley.

Ohio Oil Company's KCL F-1, is situated in Section 10-31-25, Kern, and is at Cole's Levee on the north edge of Buena Vista lake, and is many miles from the nearest wildcat test. Located in the center of a barren triangle of three fields, the well is equally distant from Ten Section, Elks Hill and Buena Vista gas field. Ohio had previously discovered the gas fields at Buena Vista and Willard.

This is the sixth important discovery made by seismograph crews in the San Joaquin Valley, and seismograph crews are scrambling all over available acreage with the expectation of making new finds.

In the North Belridge field, Tide Water Associated Oil Company has completed No. 3-22, Section 22-27-20, for an initial yield of 1800 barrels of 31.1-gravity oil per day along with 2,400,000 cubic feet of gas from 8500 feet. General Petroleum Corporation's St. Helens 2, Section 12-28-20, is bailing water, mud and a trace of oil at 968 feet and Belridge Oil Company has completed rig for No. 26-A-35, situated in Section 35-27-20.

H. B. Oil Company's No. 1, seeking an extension to the Athens-Rosecrans field is yielding around 400 barrels of 30-gravity oil per day from 7830 feet with 7-inch casing landed to 7635 feet. Union Oil Company has completed Rosecrans 26, at 7700 feet for 1500 barrels of oil per day. Barnsdall Oil Company's Rosecrans 10, southeast of the corner of Rosecrans and Main is coring below 8200 feet, having passed up the O'Dea zone. Universal Consolidated Oil Company's Trust 6, topped the O'Dea at 7200 feet and cored to 7735 feet where it is slated for a production test.

General Petroleum Corporation continues active in the Torrance Extension with completion of Poggi 10, for 200 barrels daily at 5230 feet. Western Talc Company's Western 1 was wet and has been re-cemented at 5322 feet, while Sierra Trading Corporation's Sierra-Spring 1 a northeast outpost in the new field, is expected to make a test of the upper showings around 5180 feet.

Map shows location of Tide Water Associated Oil Company's Porter 1, *SEc* 27-3-6, Los Angeles County, which is on production test. Last week on initial flow it showed 955 barrels of oil. The well is believed to be on an anticline, separate from Wiley Canyon and Newhall fields. Union Oil Company and Standard Oil Company of California are preparing to move in to protect their adjoining acreage.

CALIFORNIA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Montebello—		
Montebello Wesco, Inc., Montebello 1	650	6458
Torrance Extension—		
Bandini Pet. Co., Bandini H. D. 1	217	5260
Century Oil Co., Howery 1	640	5300
A. N. Macrate, Kupfer 1	125	5305
Richfield, Spring 1	199	5202
Severns Dr. Co., P.E. 1	312	5273
Torrance—		
Louisiana Oil Co., Lord 1A	200	5135
Pacific Western, Marble 7	130	4990
Sunny State, Bateman 1	275	5192
Wilmington—		
James Michelin, Community 2	60	3580
Richfield, Pacific Dock (LB) 12	150	3687
Union Pacific, UP (LB) E-10	110	3774
East Coalinga—		
Standard, No. 82-13C	6230	7112
Belridge—		
Tide Water Associated, No. 3	1800	8500
Canal—		
Shell, KCL A-43-14	3330	8340
Lost Hills—		
Tide Water Associated, Williamson 10-R	96	1478
Midway Sunset—		
Gibson Oil Co., Blanck 3	63	2364
Rio Bravo—		
Union, KCL 5-34	1617	11500
Round Mountain—		
Grizzley Bear Oil Co., Kelly 1	50	1655
Santa Barbara Mesa—		
Trans-Oceanic, Mdivani 1	40	1950
Ventura Avenue—		
Tide Water Associated, McGonigle 11	1631	10935
Halfmoon Bay—		
Wilshire, Cowell 2	30	1605
Pico—		
British American, Pico 1	*	7000
San Pedro—		
Hogan Pet. Co., Burkhard 1	*	2556
Coalinga—		
Shell, Coast Range 21	*	2244
Mt. Poso—		
Garner Bros., Garner 1	*	765
Greeley—		
Superior, Krause 1	*	12504

*Failures; †Junked; ‡Million cu. ft. gas.

North central Missouri has leasing play

Trenton, Mo.—Leasing in the oil play that has visited this North Central Missouri section of the Forest City Basin is picking up momentum. It is now estimated that 300,000 acres are under lease in the six-county area surrounding Trenton.

H. V. Elwell, Wichita developer, who was the first in the field and now has nearly half of the total leased acreage, is setting up rig for his Taylor 1 east of here.

The play here is still largely on the part of independents, although it is rumored that majors are behind some of the leasing now being done. It is known that majors hold three blocks now leased.

One other independent plans to move rig in three miles south of Trenton in the next week. No major companies have announced drilling plans.

JUSTICE A. A. McGILLIVRAY, chief commissioner inquiring into Alberta's petroleum industry, went to Edmonton last week to confer with J. J. Frawley, K. C., commission counsel, on a tentative program for the commission sittings which are to resume December 5 in Calgary.

SYFO CLINOGRAPH
also
SURWEL & H-K Surveying Instruments
SPERRY-SUN WELL SURVEYING CO.
Philadelphia Tulsa Houston Corpus Christi Long Beach Lafayette, La. Bakersfield, Calif. Santa Barbara, Calif.

Illinois Developments

Lake Centralia north extension may make a pumping well. Jefferson County wildcat testing value saturation show.

ILLINOIS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Clay County—		
Pure Oil Co., F. Hubble 3	110	3090
N. V. Bunn 4	1478	3073
G. W. Sharp 1A	357	3100
M. Bunn 2	251	3002
M. Bunn 3	311	3105
L. E. Hosselton et al 1A	545	3090
Ohio Oil Co., S. A. Stanford 1	*	3460
Clinton County—		
Jones & Snyder, Rogers 1	75	1388
Huddleston et al, Rogers 1	30	1398
Bert Fields, M. & I. R. R. 7	80	1371
Pekros & Nixon, A. J. Babb 1	50	1389
Iroquois Oil & Gas Co., Turner 1	*	1405
Carpenter & Goldberg, E. Dickerson 1	3	1388
Ashby, Spears 1	50	1376
Hester & Graham, Reynolds 1	15	1387
Fayette County—		
J. C. Cole et al, Greider 1	*	2201
Glasco et al, Cemetery 1	144	1624
Ray Brown, Rosa Hopper 4	150	1550
Kingwood-Duncan, Yolton 7	190	1555
Carter Oil Co., N. M. Hopper 1	531	1582
R. Larimore 1	278	1597
J. G. Main 8	453	1554
L. Wood 6	111	1487
J. C. Beck 1	311	1581
S. R. Meyers 1	166	1548
Jarvis Bros., Yakey 2	375	1575
Sinclair 5	360	1530
Sinclair 6	300	1600
Sinclair 7	300	1586
C. F. Steele, Arnold 1	90	1545
Mabee Drilling Co., Morrison 1	175	1557
First National Bank 3	131	1922
Minerva Oil Co., Richardson 1	18	1600
Iotex Corp., L. McKenzie 1	175	1567
Mulberry Oil & Gas Co., Reed 1	178	1573
Rockwood, Soper 1	*	1730
Magnolia Petroleum Co.	180	1471
Paul Doran, McCann 3	*	1543
Madison County—		
Marshall Spivey, Stormer 1	*	2201
Marion County—		
The Texas Co., J. Canull 5	510	1737
N. Corbin 2	250	1741
Richardson 1	124	1765
Craig 1	102	1915
E. Luttrell 1	92	1922
Canull 2	890	1701
Canull 6	101	1746
L. Dunning 1	105	1702
L. Dunning 2	182	1693
Reed 2B	262	1754
E. Farthing 1	447	1796
F. Miller 1	201	1792
Stonecipher 2	313	1775
Anderson, English 3	492	1825
English 1	275	1848
H. H. Weinert, Inc., Foster 1	410	1828
Mammoth Producers & Refiners, Bachman 2	130	1910
Frontier Oil & Gas Co., School 1	*	1941
Boyce et al, Forest 1	*	1710
Carpenter & Goldberg, Holsapple 1	*	2018
Boyce & Welch, Frederick 1	*	1920
Wanner et al, Young School 1	648	1768
Haynes & Thomas Drilling Corp., N. L. Lee 1	480	1776
Kingwood Oil Co., Maxwell 1	1011	1902
I. D. Lane, Dempsey 2	240	1742
J. J. Brodus, McLaughlin 1	618	1788
Magnolia Petroleum Co., D. A. Shanafelt 1	750	1761
Max Conrey, West Nation School 1	350	1860
Zephy, C. E. Lankford 1	360	1911
Adams Oil & Gas Co., Wasem 3B	13	1450
Kirk D. Holland, Cemetery Lot 2	12	1449
Adams Oil & Gas Co., C. Cox 2	60	1443
Monroe County—		
Fernwald et al, C. W. Steinman 1	*	780
Montgomery County—		
Baker & Martin, Satterlee 1	*	758
Morgan County—		
Waverly Oil Syndicate, Ltd., Dora Hubbs 1	*	1685
Perry County—		
Eason Oil Co., Perfection Coal Co.1	*	1832
Pope County—		
C. C. Whitlock et al, J. L. Anthis 1	*	1760

Olney, Ill.—W. S. Tatum's Bachman 1, Section 5-2n-2e, 2 miles due north of production in the Lake Centralia field of Marion County and 3 miles northwest of Salem, was treated with 500 gallons of acid after finding light saturation in the McClosky. If water does not intrude, the outpost may make 100 barrels a day on the pump. The McClosky was topped at 2175 feet and the well bottom-holed at 2191 feet. Casing was set to 2173 feet.

A closely watched wildcat was Magnolia Petroleum Company's Hardy 1, Section 22-2n-1e, near Woodlawn in Jefferson County, which was at 2249 feet at last report with an electric test being run to determine the value of saturation encountered. This company's Dare 1, Section 22-3s-2e, a wildcat in the same county, was drilling at 1420 feet.

In Lawrence County, Dean Shendal et al's Oris Pepple 1, Section 19-2n-11w, Dennison Township, had 350 feet of oil in the hole after 12 hours and was believed to be good for 100 barrels a day on the pump. The test, 2 miles from production and 1½ miles west of St. Francisville, encountered the McClosky lime at 1985 feet. In this county, Chester E. Harris et al's G. Downey 1, Section 22-3n-11w, Dennison Township, 5 miles southeast of Lawrenceville, cored 20 feet of McClosky. It is bottomed at 1875 feet with a test being made.

Phillips Petroleum Company entered the Illinois oil picture last week with a wildcat start on the Giller Bros. farm, 2 miles southeast of Palmyra, Macoupin County. The company has acquired leases on 3000 acres in the region, and the wildcat was drilling past the 500-foot level at last report. Eight other tests in six counties north of the Basin proper were active:

In Brown County, the Thomas 1, north of Cooperstown, was yielding some oil after acid treatment at 640 feet. Further tests are to be made to determine if commercial production can be obtained. In Christian County, Swords & McDougal's Warren 1B, Section 23-11n-1e, Pana Township, was drilling below 1600 feet, while Independent Producers & Refiners' Hackenberg 1, 9 miles northeast of Pana, was at 200 feet. In Macoupin County, the Loveless 1, 6 miles south of Carlinville, was at 800 feet; the Schwab 1, 2 miles south of Carlinville, was at 240 feet, and the R. Keele 1, 3½ miles west of Chesterfield, at 340 feet. In Sangamon County, Williams & Wittlinger's King 1, shut down at 1000 feet awaiting drill pipe. In Pike County, Apex Drilling Company's Weaver 1, Fairmount Township, setting surface pipe at 75 feet.

Company, Well and Location	Init. Prod. Bbls.	Depth
Randolph County—		
S. B. Schlosburg, W. T. Hayer 1	*	350
Richland County—		
Pure Oil Co., W. Rule 1	*	3103
J. O. Coen 17	*	3000
J. V. Wicklund, McCauley 2B	*	3123
Sager 2	277	3046
Mammoth Producers & Refiners, M. Yount 1	420	3028
Sylvester et al, Osborn 1	763	3121
The Texas Co., Winters 2	187	3091
St. Clair County—		
W. E. Neil et al, Pfeffer 1	*	1023
Shelby County—		
Kingwood Oil Co., Staley 1	*	2072
Wabash County—		
Joe Young, Keyser 10	*	1062
Warren County—		
L. E. Ketcherside et al, Nell C. Ross 1	*	875
Washington County—		
G. A. Morris, Marquard 1	*	900
Venture Oil Co., Kzychi 1	*	1422
Bitterman et al, A. Bonk 1	*	1618
Wayne County—		
Carter Oil Co., L. A. Skelton 1	653	3045
Duncan Oil Co., Ullom 1	*	3100
Andy Bruner, Kuyoth 2	175	3022
Iroquois Oil & Gas Co., P. Walker 1	150	3438
White County—		
Arab Petroleum Co., F. Doemer Sr. 1	*	3065

*Failures; †Junked; ¶Million cu. ft. gas.

New Jersey employees are given dividends

Directors of Standard Oil Company (New Jersey) have voted a $2,000,000 "extra dividend," payable to all domestic employees, most of whom are participants in the company's "thrift" plan.

This is the third distribution of its kind since the thrift plan was inaugurated in January, 1936, and it brings to $8,500,000 the amount paid by the company into the fund in additional contributions alone.

About 36,000 employees of affiliated companies in the United States will share in the $2,000,000 disbursement.

Each employee will be credited with $25 in the thrift fund—or a special account will be opened in his name if he is not at present a participant. Thirty-five thousand employees, nearly 95 percent of those eligible, are in the plan at the present time. These will receive, besides the flat $25 credit, an additional credit in proportion to their own and the company's contributions during the year from November 1, 1937 to October 31, 1938, which will be equivalent to 12 percent of all the regular contributions credited to the employee's account during that period.

There is no guarantee of additional contributions embodied in the provisions of the thrift plan, but the company expressed the hope at the start of the plan that when conditions justified such action an extra sum could be voted to aid in building up the credits of participants.

By the end of the year the total sum standing on the books of the thrift fund to the credit of participants will approximate $14,500,000. This is slightly less than the size of the fund at the close of 1937 for the reason that $5,000,000 has been taken by employees since July 1, when the plan was 2½ years old and withdrawals were permitted for the first time in accordance with the terms.

VIRGIL RICHARDSON and Wayne W. Breedlove, of Carter Oil Company's scouting division at Tulsa, were transferred last week to Illinois headquarters at Mattoon.

Eastern Fields

Kentucky wildcat flows oil that differs from Birk City. Try for production in Vanderburg County, Indiana, fails.

Pittsburgh.—Magnolia Petroleum Company's S. L. Green 1, on the Spottsville dome, seven miles east of Henderson County, Kentucky, started flowing at the rate of 75 barrels an hour when drilled into the McClosky at 2176 feet. The well started flowing when the cable rig penetrated the formation 28 inches. It was not swabbed or acidized.

The test, two miles south of Spottsville and several miles removed from the booming Birk City field, is believed to open a new pool. The grade of crude differs from that at Birk City, and the McClosky is found 300 feet deeper. Three wells drilled nearby 17 years ago by Gulf Refining Company to the Jett sand were failures. The Green 1 could have been made a small well in the Jett, at about 1600 feet.

The company will drill an offset 600 feet west on the W. H. Negley 130-acre tract with a rotary outfit. Shields Drilling Company, which sank the Green well with the cable rig, has the contract. The Green and Negley leases are part of a 5000-acre block assigned Magnolia Petroleum Company by L. S. Blair.

Bur-Kan Petroleum Company's B. Green 1, wildcat 6 miles south of Henderson, found oil in the Barlow sand at 2198 feet and a test was under way to determine whether it can be produced commercially. The well is to be shot in this formation before being carried down to the McClosky. Encouraging reports came also from Phillips Petroleum Company's I. Royster 1, in the nearby Cario section, where several saturated cores were reported taken above 2550 feet.

Carter Oil Company completed the second commercial gas well in the East Henderson County oil field on its 282-acre Frances Dempewolf tract. Production was obtained by perforating the casing in the Brown lime between 1218 and 1226 feet after a test of the lower McClosky lime showed it dry.

Daviess County, which shares the Birk City field with Henderson County, reports delivered production for September of 83,528 barrels valued at $105,-212, marking the third consecutive month in which an increase was registered. August production was 54,396 barrels valued at $69,846, while July production totaled 34,376 barrels valued at $44,539.

Gulf Refining Company entered Hopkins County, Kentucky, last week with a test on the L. W. Schemetzer lease, 7 miles west of Madisonville and near Richland.

In Vanderburgh County, Indiana, Sun Oil Company's E. & A. Bosse 1, wildcat in Section 2-5s-10w, Scott Township, 8½ miles northwest of Evansville, was abandoned. Nearing completion was Parshall-Graham Oil Company's Maude J. Simpson 1, Section 23-1n-10w, Johnson Township, Knox County. Acreage surrounding the latter test has been taken by major companies.

In the New York-Pennsylvania deep sand gas area, G. L. Cabot, Inc.'s G. Hotaling 1, Woodhull Township, Steuben County, on the Empire State side, topped the Oriskany at 3762 feet and was completed 19 feet in that formation. Its original flow of 1,500,000 cubic feet per day was increased to 2,000,000 cubic feet with a shot of 20 quarts.

Continuing a decline started several months ago and caused by unfavorable market conditions, drilling operations in the Allegany field dropped to 17 from the previous month's 24. Companies active and the number of tests drilling are: A.C.A. Oil Corporation 1, Bradley Producing Corporation 3, Cam Oil Company 1, Clarence S. Christman & Son 1, Cleveland Oil Company, Inc., 1, Ebenezer Oil Company 1, John Fay 1, Forest Oil Company 2, Genesee Oil Company 1, Porge Oil Company 1, Richardson Petroleum Corporation 1, Putnam Oil Company 1, Shamrod Oil Company 1, and Wilson Oil Company 1.

Eastern States completions gained last week in all regions except West Virginia, where the decline was 5 from the previous week's 22. Included in last week's group were 5 oil wells averaging 12 barrels initial daily production, 11 gas wells and 1 dry hole. The gain in Ohio was from 12 to 19, which included 7 oil wells averaging 15 barrels daily, 7 gas wells and 5 dry holes. In Kentucky, the advance was from 16 to 23, which included 15 oil wells averaging 165 barrels daily initial production and 8 dry holes. Pennsylvania climbed from 2 to 6, the past week's lot including a 5-barrel oil well, 3 gas wells and 2 dry holes. The net gain for the week in Eastern States was 13 wells.

EASTERN STATES Completions

OHIO

Company, Well and Location	Init. Prod. Bbls.	Depth
Ashland County—		
Gold Crown Gas Co., Easley 1	¶.15	751
Athens County—		
Williams Bros., Snodgrass 1	2	1747
Kachelmacher Estate, N. Y. Coal Co. 5	*	....
Columbiana County—		
Cushing Gas Co., McIntyre 1	*	4750
Coshocton County—		
Mossholder & Rutledge, Hughes 1	¶1.00	2987
Bell Bros., McKelvey 1	*	899
Cuyahoga County—		
Shear et al, N. Y. Central R. R. 1	50	2737
Guernsey County—		
Chaseville Oil Co., Anderson 1	¶	1562
Hocking County—		
Preston Oil Co., Sunday Creek Coal Co. 165	5	3467
Knox County—		
Rugg et al, Veatch 3	¶.09	936
Licking County —		
Kundtz-Hulse, Inc., Booth 1	15	3115
Stricker et al, Davis 2	13	639
Hoover Bros., Reidenour 1	12	618
Settles et al, Wright 1	*	780
Meigs County—		
T. J. Chase, Woodward 1	¶	680
Perry County—		
Ohio Fuel Gas Co., Jones 1	¶.80	3735
Richland County—		
Harmon & George, Koogle 1	*	2556
Stark County—		
East Ohio Gas Co., Voorhis 1	¶.80	4656
Washington County—		
D. T. Orndoff, Perdew 8	10	1310

WEST VIRGINIA

Company, Well and Location	Init. Prod. Bbls.	Depth
Cabel County—		
Peck et al, Fee 2	¶.04	3052
Calhoun County—		
Bickerstaff, Freed Heirs 2	2	1584
Stewart et al, Francis 2	¶.09	2117
Clay County—		
Pittsburgh & West Virginia Gas Co., Hardman 1	*	2838
Doddridge County—		
McIntyre, Bates 1	5	2030
Gilmer County—		
Carnegie Natural Gas Co., Boggs 1	¶.23	....
Hope Natural Gas Co., Weaver 2	¶	2117
Kanawha County—		
Lima Gas Co., Mairs 1	¶12.32	5162
Mullins Gas Co., Fisher 1	¶8.00	5114
Columbian Carbon Co., Fogarty 1	¶2.40	5105
Logan County—		
Boone County Coal Co., Fee 12-L	¶.70	2943
Monongalia County—		
Cummins et al, Cumberledge 1	¶.35	870
Ritchie County—		
R. C. Jackson, Bickerstaff 1	15	2130
Connolly, Wilson 1	¶.12	1883
Roane County—		
American Oil & Development Co., Conley 6	20	1597
Tyler County—		
Kerns, Kerns 2	20	2359
Wetzel County—		
Wasmuth & Calahan, Monroe 1	¶.14	640

KENTUCKY

Company, Well and Location	Init. Prod. Bbls.	Depth
Butler County—		
J. C. Miller, Trustee, Hawes 2	20	489
Hawes 3	30	484
Barnsdall Oil Co., Harper 3	20	193
Harper 4	20	207
Evans et al, Foster 1	*	320
Proctor 1	*	....
Daviess County—		
Major Oil Co., Peters 2	300	1879
Snowden & McSweeney, Fisher Estate 1	250	1884
W. E. Hupp et al, Taylor Estate 6	250	1894
Compton & Brown, Birk City Church 1	200	1890
Cane Run Petroleum Co., Jackson Estate 7	50	....
Ellis & Daugherty, Rex O'Flynn 4	*	....
C. J. Johnston et al, Howard & O'Flynn 3	*	....
Floyd County—		
Kentucky-West Virginia Gas Co., Ward 576	*	2812
Hancock County —		
Chester Oil Co., Baughn 12	10	325
Henderson County—		
Kentucky Natural Gas Co. and Sun Oil Co., Duncan Estate 1	500	2100
Newman 1	300	2037
Carter Oil Co., Mauzy 2	516	1942
Lockett & Gish, Diamond Island 1	*	2800
Ohio County—		
Scholl, Westerfield 4	10	....
White & Vickers, Howard 1	*	631
Teller, A. Dickers 7	*	....
Powell County—		
Wireman, Kinser Heirs 11	3	....

NEW YORK

Company, Well and Location	Init. Prod. Bbls.	Depth
Steuben County—		
New York State Natural Gas Co., Parks Estate 2	*	3663

PENNSYLVANIA

Company, Well and Location	Init. Prod. Bbls.	Depth
Bradford District		
Quinlan Oil Co., Fee	3	....
D. E. Quinlan Estate, Fee	6	....
Mix Creek Oil Corp., Fee	2	....
Bradford Transit Co. 9 wells	9	....
Forest Oil Corp., 2 wells	2	....
Niagara Oil Corp.	1	....
N. V. V. Franchot, Mgr., Trustee, J. Meridan, et al	5	....
Jacob Meridan, Herbel & Meridan	½	....
Victory Oil Co., Wright	2	....
Esther Oil, Inc., Lawton	2	....
Duke Producing Co., Duke	1	....
Bradford: Water (Pressure) Wells		
Forest Oil Corp., 2 wells	...	....
Butler-Armstrong District		
G. W. Eaglesfield, G. W. Eaglesfield	1	....
Middle District		
Chambers Oil Co., Bowersock	1	....
M. M. Master, Rickenbrode	*	....
Mrs. J. M. Haines, Lot 57	½	....
New York-Pennsylvania: Gas Field		
Van Gelder et al, J. O'Hara	¶	....
Belmont Quadrangle Drilling Co., A. Billings	*	....
Beaver County—		
John T. Galey et al, Allen Heirs 1	¶3.25	4782
Fayette County—		
Eberley et al, Combs 1	¶.85	1165
Greene County—		
Equitable Gas Co., Iams 1	¶.09	3440
Tioga County—		
G. L. Cabot, Inc., Joy 1	*	5050
Washington County—		
New Oil & Gas Co., Ramsey 1	5	3091
Braden & Herron, Bell 3	*	1200

*Failures; †Junked; ¶Million cu. ft. gas.

Michigan Fields

Five wildcats showing production possibilities

Mt. Pleasant, Mich.—Southwestern Michigan's shallow 1200 to 2200 foot Traverse limestone in all probability will continue as the magnet for extensive wildcatting for several months. This was reemphasized this week when five new districts in Allegan, Van Buren and Kent Counties showed for probable commercial production.

Leasing activity is now showing considerable strength along a 300-mile strip of Western Michigan, extending South through St. Joseph and Cass Counties on into Indiana.

Already at the bursting point with a townlot boom in Bloomingdale village, where 13 commercial wells were added to the previously completed 6 and 39 other drilling operations are active, Van Buren County showed commercial possibilities in two new districts during the week, one east and one west of the present center of operations.

Ross and Miller's Landrus 1, NW SW NW, Section 11-1s-15w, about 4½ miles west of the Bloomingdale townsite boom, flowed into pits at 1268 feet at the Traverse shale lime contact before the producing casing string had been run. Water coming in from the Coldwater above the pay finally killed the well out and operators had it on the swab after casing with 6-inch this week. Probably it will be drilled deeper.

Three miles east of the Bloomingdale townsite play, Goff, Shrock and Zone's Maier 1, SW NW NE, Section 14-1s-14w, Bloomingdale Township, flowed 24 barrels natural at 1299 feet and was shut in for tanks. Operators expected it would prove a new district rather than an extension as wells drilled on the east flank of the original Bloom-

MICHIGAN
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
American Drilling Co.'s Kage 1, nw nw se 25-1n-14w	*	1327
Gordon Oil Co.'s Wakeman 1, ne ne sw 1-3n-14w	*	1521
Essink 1, nw se sw 22-4n-14w	200	1481
McClanahan Oil Co.'s Johnson 1, nw sw nw 3-2n-11w	*	1800
Swanson Consolidated's Essink 3, sw sw sw sec 22-4n-14w	176	1479
W. L. Harvey's Busscher 1, nw ne ne 27-4n-14w	*	1540
Muskegon Dev.'s Berens 6, sw sw ne 36-4n-14w	200	1465
J. W. McIntosh's Grohenhide 3, sw ne sw 36-4n-14w	*	1505
Black Rock's Scholten 5, ne ne sw 36-4n-14w	75	1501
A. S. Cochran's Goodman 1, se se ne 20-4n-13w	*	1629
J. B. Northcott's Schipper 4, nw se nw 21-4n-13w	60	1579
Arenac County—		
Drabold & Sherry's Milne 2, se nw ne 25-19n-3e	10	2147
Bay County—		
American Drilling Co.'s Hecht 1, sw sw sw 10-15n-3e	*	3255
Clare County—		
Gulf Ref. Co.'s Van Horn 3, ne se nw 3-18n-6w	1100	3884
Freeman Oil Co.'s Van Horn 1, ne se ne 4-18n-6w	2200	3885
Pure Oil Co.'s Zink 1, c n sw se 27-19n-6w	650	3891
Bicknell A-1, sw nw ne 34-19n-6w	900	3887
McClanahan Oil Co.'s State 1, se nw sw 33-19n-6w	325	3889
Daily Crude Oil Co.'s Van Horn 2, sw sw sw 34-19n-6w	4500	3912
Gladwin County—		
McClanahan Oil Co.'s Connolly 2, nw sw nw 35-17n-2e	200	3525
Lapeer County—		
Hether & Appel's Foster 1, ne ne se 26-9n-12e	*	2881
Montcalm County—		
Taggart's Busch 6, c se 8-12n-9e	¶2	1131
Osceola County—		
Fortney Oil Co.'s Beall 1, se se se 25-18n-9w	*	3965
Roscommon County—		
V. R. Kirkham's Helen 1, ne ne se 36-22n-2w	*	3955
Van Buren County—		
R. T. E. Corp.'s Abbott 1, sw sw nw 16-1s-14w	35	1225
Cecil Steele's Keeling 1, nw sw nw 16-1s-14w	25	1220
Pyramid Oil Co.'s Lindsley 1, nw sw nw 16-1s-14w	160	1213
J. H. Riley's Martin 1, ne sw nw 16-1s-14w	45	1212
Fred J. White's Plum 1, ne sw nw 16-1s-14w	90	1216
MR&T's Rowlinson 1, nw sw nw 16-1s-14w	45	1199
J. V. Wicklund's Cook 1, sw sw nw 16-1s-14w	1000	1220
W. L. Harvey's Abernathy 1, ne se ne 17-1s-14w	100	1221
James E. Flanigan's Borger 1, nw ne se 17-1s-14w	210	1230
Bridger Basin's Comisky 1, nw se ne 17-1s-14w	1300	1201
Redman Oil Co.'s Cooley 1, ne se ne 17-1s-14w	500	1202
Fred J. White's Homans 1, ne se ne 17-1s-14w	90	1218
D. F. Jone's Rodgers 1, se ne ne 17-1s-14w	75	1223
Meldin 1, ne ne ne 17-1s-14w	1200	1222
Vanco Oil Co.'s Robart 1, ne se ne 17-1s-14w	60	1215
Gulf Refining Co.'s Wasklenke 1, se se sw 23-4s-15w	*	1092

*Failures; †Junked; ¶Million cu. ft. gas.

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ingdale pool, flattened out structurally and were dry.

MacCullum and Herrs' Story 1, SE SW SW, Section 32-7n-12w, Walker Township, Kent County, is still under test swabbing from 10 to 30 barrels per day. Collin and Soper have shut down the Simmons 1, Section 3-4n-10w, Barry County, after drilling a 500 foot oil show in Traverse lime at 1942 feet.

While 13 new producers were added in the Bloomingdale townsite play during the week, only one offered any potential chance of the field spreading out of the original chartered area, where about 130 tests are now expected to be drilled.

More rigid rules for fire prevention are expected as the result of a well getting out of control, throwing the drilling stem into the mast and flowing wild several minutes. Oil was sprayed over about two-thirds of the village with several families moving out.

About 13 new locations followed completion of flank producers in the Freeman-Redding district, Clare County, last week, with one well this week farther strengthening territory added a week ago. Pure Oil Company's Bicknell A1, SW NW NE, Section 34-19n-6w, topped Monroe at 3,881 feet, about 11 feet off structure, and showed 600 feet of oil in 5-inch casing natural at 3887 feet. Acidized with 500 gallons it kicked off at 60 barrels an hour. It is about a half mile south of developed production and ¾th mile north of developed production.

Rated as the biggest well drilled in Michigan this year is Daily Crude Oil Company's Van Horn 2, offset by three flowing wells, SW SW SW, Section 34-19n-6w, Redding Township, which initialed 550 barrels the first 2 hours under test at 3912 feet from Monroe lime. Operators rated it at 4500 barrels potential.

Suit has been instituted in an attempt to halt Swanson Consolidated Oil Company from drilling on a 66-foot wide mile long strip at the Redding-Freeman Township line, Clare County, a strip leased to Swanson by the Clare County Road Commission. The strip has not been used for road purposes in recent years, if ever. Swanson has two rigs up but has not moved in tools. Socony Vacuum Oil Company has the lease, developed, on the south side of the strip and Daily Crude Oil Company has the north adjoining lease, also partly developed. The Van Horn 2 well, just completed by Daily, is an offset to the projected first well on the narrow road site.

New Mexico Fields

Southern Lea County production almost joins Texas field. Offset requirements continue drilling on upward trend.

Hobbs, New Mexico.—Completion of a semi-wildcat oil and gas well on the south border of Lea County paves the way for the eventual linking of the Rhodes pool, Lea County, and the Scarborough field, Winkler County, Texas. Ohio Oil Company's Mary Wills 1, C NE NW 35-26s-37e, halved the 3½-mile interval separating the two areas, in developing a flow of 1,500,000 feet of sweet gas and 15 barrels of high-gravity oil initial after 300-quart nitro shot in sandy-lime at 3100-3280 feet. The hole is bottomed at 3300 feet, or 306 feet sub sea. Cavings resulting from the nitro shot made it necessary to land 270 feet of 5-inch liner at 3280 feet.

Westmount Oil Company's State-Amerada 1, C NW NE 12-17s-36e, Lea County wildcat on a northwest trend from the Hobbs field, continued fishing the past week with drill pipe stuck at a total depth of 3327 feet. This prospect is rated as the most promising for production now underway in the county since it is checking higher structurally than previously drilled failures, and also encountered a heavy gas flow in the lower Yates sand, topped at 3060 feet, with an elevation of 3830 feet.

Pumping test given F. C. Wilson et al's State 1, C SW NE 7-21s-35e, southwest outpost for an abandoned oil pool centering 5 miles west of the Eunice field, yielded 123 barrels of oil in 6 hours at 3813 feet, or 134 feet sub sea. The oil zone was shot with 100 quarts of nitro at 3773-3810 feet. A north offset is being drilled by the partnership. The Texas Company's Lodewick 1, C SW SE 34-18s-33e, 4¼ miles south by east of a wildcat pumper completed earlier in the year by the company, logged top of Yates at 2910 feet, or 849 feet above sea level, and was drilling hard lime at 4295 feet. No shows have been recorded.

NEW MEXICO Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Lea County (Hardy)—		
Gulf, McCormack, 6 c nw se 32-21s-37e	160	3780
Lea County (Langlie)—		
Anderson-Prichard Oil Corp., Wells-Conoco 3, c ne nw 5-25s-37e	216	3566
Lea County (Vacuum)—		
Magnolia, State 1-m, c ne nw 34-17s-35e	617	4620
State-Bridges 17, c ne ne 25-17s-34e	185	4750
Shell, State 1-U, c ne nw 3-18s-35e.	*	4900
Rio Arriba County—		
Continental, Hughes 1, 1-28n-4e...	*	1920

*Failures; †Junked; ¶Million cu. ft. gas.

Operations Continue Gain

Offset drilling requirements provided another substantial gain in Lea County operations the past week. Eight fields were assigned 16 new tests, and the majority of these will force the drilling of one or more offsets since all are on proved locations. Field work in the county has been maintained at a high level for more than a month. This activity has stimulated the demand for oil field supplies and drilling crews in the face of an anticipated slump because of the recent price cut and slash in production allowables.

The Vacuum field, which was allotted 7 new projects, and the group of fields comprising the sandy-lime belt in the east portion of the county accounted for the bulk of the new activity. The Monument lime area gained a single test when Continental Oil Company started work on State 1-a-C-16, SW SW NW 16-20s-37e, twin location to a producer junked after a series of workover jobs. The latter caught fire April 23, 1937, while in process of completion, and 3 workmen were killed.

An east extension for the Lynn field is to be sought by Texas Pacific Coal & Oil Company's State 7-A, NW NW NW 22-23s-36e, which has rigged up. The company holds lease on the west half of the section, and the discovery gasser, which preceded oil production is in the southeast corner of the tract.

Maljamar Oil & Gas Corporation, owner of the bulk of the Maljamar field, western Lea County, is adhering to its policy of continuous development, and had landed surface pipe for Mitchell 6, C SW NE 29-17s-32e.

The Hardy sandy-lime area contributed two new operations required by offsets when Continental Oil Company erected derricks for State 2-A-26, C NE SE 36-20s-37e, and W. C. Hawk 1-B-6, NW NW SE 6-21s-37e. In the Langlie field, Anderson-Prichard Oil Corporation's Wells-Conoco 4, C NW NW 5-25s-37e, and Italo Petroleum Corporation of America's Carlson 1-B-27, NE NW NE 27-25s-37e, has moved in rig.

Allowable Up

Allowable production for the state was boosted 1600 barrels to 108,400 barrels daily effective November 1. This increase made it possible to raise the per-well allowable in Lea County 1

barrel to 56 barrels daily for the November 1-16 period. The state's quota was hiked 3000 barrels daily effective October 16 on the strength of an export contract for this amount being booked by Nash-Windfohr & Brown and Flint Production Company for the delivery of 750,000 barrels of Artesia district crude to a refinery at Trieste, Italy.

Vacuum field has been subjected to pipe line proration since October 1 when the output per well was cut back to 38½ barrels daily. The new proration schedule sets an allowable of 56 barrels daily for the 90 completed wells, and operators are credited with back allowable on the amount turned back by the pipe line company. There is no immediate prospect of this most active drilling center in the state being relieved of pipe line proration.

Large Potential

The Texas Company's State 9-O, C SE SW 36-17s-34e, near south end of the Vacuum field, registered the largest potential among late completions. This well flowed 152 barrels of oil in 3 hours natural from lime at 4710 feet, with a gas/oil ratio of 785/1. Magnolia Petroleum Company's State 1-M, which passed up a small oil producer in the 3067-75 foot sand, flowed 617 barrels natural on potential gauge from lime at 4410-4620 feet. The company's rig has been skidded to State 2-M, C NW NW 34-17s-35e. Phillips Petroleum Company added 5 new locations. State-Hale 2, C SE SE 35-17s-34e, has erected derrick. The company's State-Sante Fe 12, 13 and 15 are on the north line of 28-17s-35e, offsetting completed wells; and State-Santa Fe 14, C SE SE 20-17s-34e, is also a required offset. Standard Oil Company of Texas' State 2, lease 4, C SW SE 27-17s-35e, was drilling below 1000 feet.

Gulf Oil Corporation's Mattern 1-F, C NW NE 1-22s-37e, a new project for the prolific oil area near the junction of the Eunice and Penrose fields, will lead to the drilling of more than a dozen progressive offsets, unless the spread of production is checked by failures.

Shell Petroleum Corporation's Harwood 1, C S½ SE SE 27-7s-35e, south central Roosevelt County geophysical prospect, maintained its relatively high structural position in logging top of Yates at 2380 feet, and top of brown lime at 3490 feet, with an elevation of 4200 feet. This important wildcat was drilling at 3950 feet, and is slated to halt near the 4000-foot level to cement a protection string of 7⅝-inch pipe.

ROCKY MOUNTAIN Completions

MONTANA

Company, Well and Location	Init. Prod. Bbls.	Depth
Toole County (Kevin-Sunburst)—		
P. L. Eddy, Sohn 1, se sw ne 23-35n-3w	*	1725
WYOMING		
Niobrara County (Lance Creek)—		
Ohio Oil Co., Lamb 11, sw se se 5-35n-65w	1772	5542
Weston County (Osage)—		
Updike Bros., Government 1, ne sw ne 35-46n-64w	40	2039
California Operators, Inc., Fee 1, se se sw	*	280
Taylor, Dodge & Pauley, Fee 19 csw nw ne 17-46n-63w	*	400

*Failures; †Junked; ¶Million cu. ft. gas.

Rocky Mountain Fields

Hiawatha gas field promises oil production from Tertiary

Casper Wyo.—Development of crude oil in the Wasatch beds of Tertiary age in the Hiawatha field appeared more of a certainty this week as Mountain Fuel Supply Company plugging back and perforating to test for gas, swabbed 80 barrels of 46 gravity crude oil initial. Hiawatha is located in the Tri-State Basin area embracing corners of Colorado, Wyoming and Utah.

Georgia Kuykendall 1, NE NE SE 22-12n-100w, Moffat County, Colorado, had the oil sand from perforations in the 4¾-inch casing at 2478-84 feet in a member of the Wasatch series. The company is rigging up pumping equipment and cleaning hole for a production test.

Since its discovery in 1926 as an important gas field, Hiawatha has yielded small amounts of oil from several wells. In 1924 the company's Wilson 4-B, CNE NW 23-12n-100w, developed 20 barrels of oil daily at 2304-2337 feet after plugging back from 3797 feet, but this oil was considered scarcely commercial.

In the Powder Wash field, also in Moffat County, Colorado, Mountain Fuel Supply Company developed the first large yields of oil from rocks of Tertiary origin in the Rocky Mountain division. The company in 1936 completed a well in NW SW SE 32-12n-97w, for 47½ barrels of 39.9 gravity oil at 5014 to 5032 feet in the Lower Wasatch. Considerable importance is attached to development of oil in rocks of later origin than the Cretaceous beds in the Rocky Mountain division, as the huge geo-basins are largely Tertiary blanketed and afford possible beds containing oil strata at shallow depths over the greatest areal parts of Colorado, Wyoming, and Montana. Testing in the Tertiary blanketed geosynclines had been largely discouraged, because of the great depths that must be drilled to reach the Cretaceous beds though introduction of the seismograph and other geophysical methods have occasioned considerable geological study and several important leasing trends in these basins. Now with further assurance of Tertiary oil it is believed that considerably more testing will take place on a basinward trend in the Rocky Mountain region.

Hiawatha is one of six structures developed along the Vermilion Creek uplift. It is a northeast-southwest trending structure with 235 feet of local closure and embraces approximately 4400 acres within the lowest closing contour. It is believed that with the diminishing of gas pressure and drilling of down structure wells that the field may produce oil in large amounts.

Felmount Oil Corporation and Adams Oil Company this week got under way on joint test, a semi-wildcat, south of production in the Lance Creek field, Niobrara County, Wyoming. Baker 1, NW NE SW 8-35n-65w, is running rig foundations.

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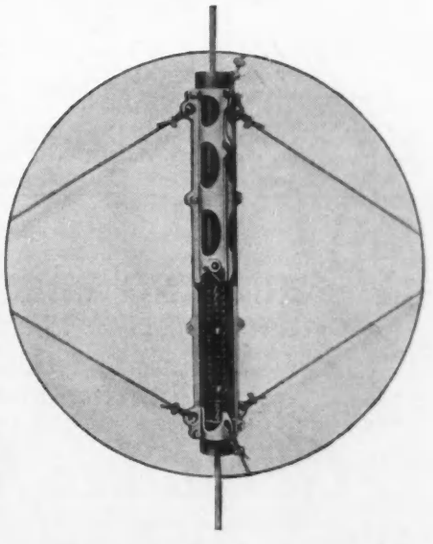

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IMPORTANT WILDCAT TESTS

ALABAMA

Barbour—H. A. Stebbinger's Mrs. Alyce Robertson 1, ne ne 19-10-26, rur. **Choctaw**—Joe Modisett et al's McCorvey 1, se sw sw 20-9n-2w, owdd 7520 ft. **Greene**—R. T. Jeffrey's R. C. Lett 1, 3-20n-2e, sd 720 ft. **Lawrence**—Mid-Southern Pet. Co.'s Rob Jacobs 1, sw se 11-7-7, ruct. **Mobile**—J. C. Prine's King 2, ne ne 4-1n-4w, sd 1120 ft.

ARKANSAS

Calhoun—Samuel S. Alexander's Smythe 1, c ne ne 7-11-14, base anhydrite 2985 ft, sd 3275 ft. C. E. Murdock's Southern Kraft 1, nw nw 17-14-13, fsg, td 3045 ft. **Columbia**—Atlantic's Levi Garrett 1, c nw sw 13-17-20, elev 364 ft, base anhydrite 3233 ft, top James lime 3767 ft, top Cotton Valley 5271 ft, coring 7425 ft. Petroleum Finance Co.'s Barnett 1, c nw se 14-17-20, rur. Standard of La.'s E. D. Harris 1, c sw ne 15-17-19, 9⅝ csg 2429 ft, dr 5301 ft, hd sand. G. H. Vaughn's Ievi Garrett 1, c se se 14-17-20, elev 302 ft, top lower Marine 5315 ft, top Buckner anhydrite 7259 ft, top Permian lime 7317 ft, top porous lime 7345 ft, logged 137 ft oil saturation, 33 ft gas-dist. saturation, 7-in csg 7500 ft, testing, td 7522 ft. Tidewater-Seaboard's J. T. Beene 1, c se nw 15-18-19, elev 232 ft, top lower Marine 5886 ft, dr 6530 ft. **Craighead**—Tenn-Ark Inc.'s Martin 1, 35-14n-3e, ruct, td 1754 ft. **Crittenden**—Stanley Oil Corp.'s D'Anner Hrs. 1, c 18-8n-9e, sd 3351 ft. **Little River**—Barbere et al's Mills 1, se sw nw 18-12-29, ru and sd. Clark et al's Strawn 1, se sw 20-10-32, woc 62 ft. Hartford Oil Corp.'s Denning 1, ne ne sw 6-13s-30w, dr 1735 ft shale. D. L. Hersey et al's W. D. Waldrop 1, se nw 4-13-31, top anhydrite 2208 ft, sd 2210 ft. **Lonoke**—Cabot Drlg. Co.'s Cabot Townsite 1, 18-4n-9w, 4½ in csg on pckr 1540 ft, dr 2420 ft. J. W. Anderson's Eddington 1, c nw ne 7-4n-9w, dr 910 ft last report. Hudson et al's Young 1, sw nw 8-3n-7w, sd 225 ft. J. F. Russell's J. T. Gunter 1, se se 17-5-10, sd 1650 ft. **Mississippi**—Benedum & Trees' Winston Mack 1, nw sw 3-15n-12e, woc 3106 ft. **Nevada**—Texas Canadian Oil Corp.'s Stocks 2, sw se 9-15s-22w, 6⅝ in csg 1359 ft, top Nacatoch 1206 ft, woc, td 1402 ft. **Pike**—Bruce E. Wallace's Tilyou 1, ne se 26-8s-24w, fsg drill stem 395 ft. **Pulaski**—Coker Oil Corp.'s Stone 1, 36-3n-11w, sd 905 ft. A. L. Kitselman's Fee 1, se sw 2-1s-13w, dr 3571 ft. **Union**—Fohs Oil Co.'s Craig 1, c se ne 5-18s-14w, elev 251 ft, chalk 2352-2549 ft, top Meekin sand 2550 ft, top Graves sand 2680 ft. Tokio red beds 2705 ft, ran electrical log, dr 3692 ft.

CALIFORNIA

Los Angeles—Royal Land Co.'s No. 1, 8-4-17, co 1120 ft. Richfield's Dominguez Estates 1, 2-4-13, grade. Continental's Newhall 1, 20-4-17, dr 900 ft. Newhall Drlg. Co.'s Needham 4, 13-3-16, m 3505 ft. Texas Co.'s Anderson-Spring 1, dr sand and shale 4850 ft. R. T. Grady's Sepulveda 1, 23-5-14, rur. Hogan Pet. Co.'s Burkhard 2, 6-5-13, lcn. **Orange**—A. V. Oil Co.'s No. 1, 16-6-10, testing 4751 ft. **San Barnardino**—Carbon Canyon Oil Co.'s Schuh 1, 30-2-8, lcn. Southern Counties Pet. Co.'s Los Serranos 1, 22-2-8, dr 2210 ft. **San Diego**—Dauphin Development's Irwin Kelly 1, 16-12-4, fsg 625 ft.

SAN JOAQUIN VALLEY

Fresno—Franklin C. Grimes' No. 86-12C, 12-20-15, grade. Petroleum Securities' No. 37-7F, 7-20-16, grade; No. 88-7F, 7-20-16, dr 7041 ft; No. 31-18F, 18-20-16, dr 6450 ft; No. 71-18F, 18-20-16, grade. Standard's No. 71-13C, 13-20-15, grade; No. 1-17F, 17-20-16, rig. Superior's Cagle 1, 6-20-16, lcn; Coalinga Fee 1, 7-20-16, dr 7111 ft; Coalinga Fee 2, 7-20-16, grade. Stuart Oil Co.'s Stuart 1, 12-21-14, dr 600 ft. Tide Water Associated's Fleishacker 57-1, 1-19-15, dr 6000 ft. Dauphin Dev. Co.'s Ragan 1, 19-21-14, dr 3935 ft. **Kern**—Ohio's KCL F-1, 10-31-25, coring 9280 ft. California Lands' Salisbury 1, 7-29-24, dr 6585 ft. Shell's KCL B-87-4, 4-30-25, dr 8818 ft. F. M. Pottengar's Villard 1, 2-26-28, lcn. G. E. Renner's R. H. L. 2, 27-30-30, dr granite 2000 ft. Richfield's Tupman-Western 1, 32-30-25, dr 8339 ft. Shell's KCL A-58-8, 8-27-26, dr 6082 ft. Texas Co.'s Camp-West-Lowe 1, 7-29-27, sdtr 6425 ft, td 10,122 ft. Petrol Corp.'s Reserve-Petrol 33-5, 33-11-19, dr 6566 ft. Richfield's KCL 1, 28-11-20, r 7832 ft. Tide Water Associated's S.P. 2, 15-11-19, rur. Wilshire's Tejon 34-1, 34-11-19, rig. C. C. White's Armstrong 2, 9-26-26, rig. Framac Oil Co.'s Brown 3, 22-27-27, testing 1355 ft. Julius Freid's No. 1, 34-32-24, dr 4260 ft. General's St. Helens 2, 12-28-20, bailing 968 ft. Continental's KCL E-1, 17-30-26, wocs 8574 ft. Richfield's Union Avenue 1, 6-30-28, dr 7223 ft. Continental's KCL A-3-8, 8-27-24, co to perforate 13,221 ft, td 13,644 ft; Seaboard Associated KCL C-1, 26-27-24, swabbing 13,046 ft. Standard's Mushrush 1, 7-27-24, fsg 13,100 ft, td 13,135 ft; KCL 8-B-1, 17-27-24, dr 13,244 ft.

COASTAL COUNTIES

Santa Barbara—Richfield's Tinaquaic 1, 36-9-32, dr 800 ft. Barnsdall's Pezzoni 1, 15-8-32, dr 4420 ft. Petrol Corp.'s Magenheimer 5-11, 9-8-32, replugged 4554 ft, td 4714 ft. J. E. O'Donnell's Helen 1, 8-7-33, dr 4960 ft. Continental's La Laguna 2, 25-8-31, fsg 3505 ft, td 3845 ft. General's La Laguna 1, 6-7-30, dr 3040 ft. **San Luis Obispo**—I. L. Burch's No. 3, 4-10-26, dr 1438 ft. Loma Grande's Luis 1, 28-31-13 ,dr 1718 ft. Eureka Pet. Co.'s Union 1, 27-26-13, dr 525 ft. **Ventura**—High Mesa's Butcher 1, 16-4-22, dr shale 1740 ft. Claran Oil Co.'s Hardison 1, 22-4-20, rur 410 ft. Commander's No. 7-F, 13-4-19, redrilling 550 ft, td 575 ft. Merchants Pet. Co.'s Cochrane 8, 1-4-20, dr 1375 ft. St. Louis Oil Co.'s Williamson 1, 1-4-20, dr 1200 ft. El Rancho Oil Co.'s Elkins 2, 9-3-19, foundation. Texas Co.'s Shiells 135, 4-3-19, dr 4066 ft. Colima Oil Co.'s Burge 2, 29-5-19, co 3485 ft. Section 20's No. 1, 20-5-19, dr 2250 ft. Hardison & Temple's No. 1, 22-4-21, wocs 656 ft. Stallings, Senter & Ahlburg's Stallings 1, 24-4-21, pumping water and trace of oil 1445 ft. Ventura Dr. Co.'s Canet 1, 10-3-23, dr 1450 ft.

EXTREME NORTHERN

Colusa—Amerada's C.L.C. 1, 34-16-1, dr brown shale 7878 ft. **Glenn**—Ohio's Willard 2, 18-20-2, pumping mud and cement into old No. 1 hole 2253 ft. **Humboldt**—Texas Co.'s Eureka 2, 22-3-1, recompleted and shut in 7708 ft. **Monterey**—Texas Co.'s Lewis 1, 1-19-5, dr 4380 ft. A. A. Anderson's Hillman 1, 15-24-14, co 3100 ft, preparing to run casing 4004 ft. L. B. Tannehill's Quinn 1, 35-20-8, dr 1675 ft. **Sacramento**—Superior's Reclamation Board 1, 7-3-3, dr 3883 ft.

COLORADO

Elbert—Plymouth Oil Co.'s Brosky-Union Pacific 1, csw sw 19-10s-60w, dr 6780 ft. **Las Animas**—Hulme, Johnson & Alison's Azar 1, se se nw 27-34s-58w, dr 570 ft. **Mesa**—Continental, California and Amerada's Miller 1, sw sw nw 36-8s-91, dr 9248 ft. **Moffat**—Mackinnie Oil & Dr. Co.'s Coles 1, sw sw se 1-3n-92w, dr 2975 ft. Isenberg, Parker & Meyers' Meyers-State 1, nw se ne 36-4n-103w, Willow Creek, spd. **Park**—South Park Oil Co.'s Lemarr 1, ne ne se 34-11s-75w, dr 6390 ft. **Pueblo**—Ed Puckett's Barber 1, se nw 35-21s-66w, dr 817 ft.

FLORIDA

Levy—Fla. Discovery Oil Co.'s Sholtz 2, sw sw ne 9-15s-13e, top chalk 3110 ft, gas odor 3853 ft, dr plug in 6-in csg, td 3986 ft. **Nassau**—St. Mary's River Oil Corp.'s Hilliard Turpentine Co. 1, nw nw se 19-4n-24e, elev 110 ft, dr plug, td 4508 ft. **Polk**—Edw. A. Hill's Polk County Lbr. Co. 1, nw nw ne 32-25s-25e, dk. **Suwannee**—J. W. Phillips Oil Expl. Co.'s Shilkett 1, nw nw 14-4s-14e, spd and sd. Wm. G. Blanchard's Lucy Cotton 1, se ne 35-3s-11e, sd for heavier rig 203 ft.

ILLINOIS

Bond—Thornwell Drlg. Co.'s Morris 1, nwc 16-6n-4w, fsg 165 ft. Huppard et al's Dresser 1, sw ne nw 21-6n-4w, testing, td 1830 ft. Elmor et al's Dilman 1, sw se sw 13-6n-2w, sd 740 ft to ur. Lindsey Bros. et al's Butter 1, nec sw 31-4n-2w, fsg 1270 ft. **Christian**—Swords & McDougall's Warren 1, nw se se 23-11n-1e, ur 1633 ft, hfw. **Clark**—Snavely's Handy 1, ne ne nw se 17-11n-12w, dr 1325 ft. **Clinton**—Watkins & Wright's Wise 1, ne nwc se 24-1n-3w, sd 1360 ft. Petroleum Service, Ltd.'s Bott 1, c nw sw sw 17-2n-2w, dr 200 ft. Noelkemper & Murphy's Mikile 1, se sec nw 11-3n-3w, sd 60 ft. White et al's Wilton 1, sw se nw 19-3n-2w, dr 225 ft. Moore et al's Leicht 1, swc se 10-3n-1w, dr 675 ft. **Coles**—Wafford's Andrews 1, sec 21-11n-7e, dr 2165 ft. Swearer & Crown Pet. Co.'s Sanders 1, sec nw 27-13n-8e, mim. **Cumberland**—National Consumers' Harrison-Ward 1, ne se ne 17-9n-9e, td 1990 ft. **Edgar**—Martin et al's Sturgell 1, c nw ne 12-12n-14w, lcn. Meyers' Brinkerhoff 1, c se se 26-13n-13w, sd 1235 ft, hfw. **Edwards**—Leach Brothers' Lee 1, sw ne se 11-1s-10e, dr 3600 ft. **Fayette**—Lindsey et al's Bowers 1, sw ne se 36-4n-1w, dr 150 ft. Stevenson's Harkless 1, c ne se ne 30-5n-1e, lcn. Longoria's Brasch 1, nec sw 1-5n-2e, sd 1817 ft, testing. Flinchbaugh's Freeland 1, swc 10-6n-1w, sd 452 ft. Hurricane Creek Oil Co.'s Eckard 1, c nw ne 15-6n-1w, sd 1390 ft. Putman et al's Surley 1, c se se 35-6n-1w, dr 1300 ft. Mamouth & Murphy's Neal 1, c sw se ne 32-6n-3e, td 1475 ft. Ketcherside & Fisher's Freeburg 1, nw sw sw nw 11-7n-1e, dr 650 ft. Simmell et al's Workman Estate 1, sw swc se 26-7n-2e, rog. Ruwaldt & Johnson's Mautz 1, nw nw ne ne 28-7n-3e, td 1612 ft. Hayes, Miller et al's Thull 1, c se sw se 14-8n-1e, fsg 800 ft. Producers Oil Co.'s Farthing 1, nec 29-8n-1e, dr 1250 ft. Continental Oil Co.'s Bartlett 1, ne nw ne 30-9n-1e, dr 1300 ft. Beck & Moore's Burrus 1, c se ne ne 27-9n-2e, pits. Baker's Garrett 1, ne se se 9-9n-3e, mirt. Braver et al's Banning 1, sw se se 15-9n-3e, mirt. Simar Oil Co.'s Prudential Life Ins. Co. 1, swc 16-9n-3e, sd 45 ft. **Hamilton**—Weinert's Hamilton 1, c s½ se nw 32-3s-7e, rog. **Jefferson**—Lewis' Bates 1, ne nec nw 18-1s-1e, dr 500 ft. Garfield's Pitchford 1, swc nw 2-2s-11e, dr 2215 ft. Magnolia Pet. Co.'s Harvey 1, nw ne sw 22-2s-1e, dr 1125 ft. Allen's Puckett

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper.*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
bs—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so&g—*show oil and gas.*
fsg—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

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1, ne nw nw 12-3s-2e, dr 1900 ft. **Johnson**—Ellizie's Boner 1, c sw ne 30-11s-3e, sd 220 ft. **Lawrence**—Hanke et al's Carrie 1, c se ne 21-2n-13w, mim. Rockstead's Ulrich 1, se sw ne 20-3n-13w, sd 580 ft. **Macoupin**—Dillon et al's Keele 1, sec ne 32-10n-9w, dr 350 ft. Phillips Pet. Co.'s Giller 1, ne nw nw 15-11n-8w, wocs 40 ft. **Madison**—Callahan et al's Hall 1, sw ne se ne 1-3n-5w, dr 450 ft. **Marion**—Pruitt Bros.' Kabala 1, c nwc ne 9-1n-1e, sd 800 ft. Kiskaddon's Johnson 1, ne nw ne 32-1n-1e, dr 1250 ft. Boyce's Stover 1, nec sw 30-1n-2e, dr 1600 ft. Oil Roy's Suggs-Meeker 1, sw nw nw 11-2s-1e, sd 1692 ft. Mid-Valley Steel Co.'s Bedwell 1, se ne sw 5-2n-2e, wocs 90 ft. Totum's Brockman Bros. 1, c ne ne 5-2n-2e, wocs 2185 ft. Redwine's Pruden 1, swc nw 10-2n-2e, sd 1974 ft. Granier Bros.' Mulvaney 1, se ne se 6-2n-4e, dr 2165 ft. Baldwin & Streeter's Schroffler 1, nec se 11-3n-2e, dr 1435 ft. Devonian Oil Co.'s Shufeldt 1, nw ne sw 24-3n-3e, rur. Conrey & Griffin's Bilek 1, nwc ne 26-4n-2e, dr 1400 ft. **Massac**—Kahle et al's Harovick 1, swc 23-14n-3e, dr 3030 ft. **Menard**—Scroggins' Fee 1, c sw sw 24-19n-5w, dr 1550 ft. **Montgomery**—Swords & Dougal's Ohman 1, sw nw nw 10-10n-1w, sd 1200 ft. **Morgan**—Alexander Oil Co.'s Gray 1, e½ nw ne 25-15n-9w, dr 1555 ft. **Piatt**—Pray's Baker 1, sw ne ne 17-18n-6e, dr 3010 ft. **Randolph**—Chlorins et al's Anderson 1, sw nw ne nw 12-4s-6w, dr 875 ft. Cain et al's Smiley 1, sec nw 31-4s-5w, sd 1108 ft. Arnes Drlg. Co.'s Nicholson 1, ne nw nw nw 12-5s-9w, dr 1245 ft. Badger Oil Co.'s Schroeder 1, se nw nw 27-6s-6w, dr 1300 ft. **Richland**—Leathers' Yonaka 1, c nw se sw 22-2n-14w, sd 200 ft. **Sangamon**—Morris et al's King 1, nw ne se 24-15n-7w, fsg 1100 ft. **Shelby**—Kingwood's Vogel 1, c se ne nw 1-9n-4e, lcn. Black et al's Hopkins 1, se nw se 32-10n-4e, lcn. Jolly's Jenkins 1, se sec 26-10n-4e, hfw, td 1718 ft. Fredrick et al's Fluge 1, c n½ ne nw 34-10n-5e, rur. Pigg et al's Swiney 1, nwc sw 10-11n-5e, pits. Tatum's Harper 1, sw nw se 8-12n-2e, drk. Independent Rfg. & Producers Oil Co.'s Hackenburg 1, se sw sw 20-12n-2e, sd. Raney et al's Unknown 1, se ne nw 25-12n-2e, rog. Prunty Prod. Co.'s Hickey 1, c se sw sw 34-12n-4e, dr 1200 ft. **St. Clair**—Badger Oil Co.'s Reichert 1, nec 3-1s-10w, dr 110 ft. **Wabash**—Guilds & Jones' Unknown 1, c sw se 13-1s-13w, mirt. **Washington**—Fell Oil Trust Co.'s Thomas 1, se nw sw sw 15-1s-2w, sd 642 ft. Apex Drlg. Co.'s Weaver 1, ne se ne ne 25-3s-4w, dr 100 ft. **Wayne**—Lake & Allen's Hazel 1, c ne nw 22-2n-9e, dr 1875 ft. Robinson et al's Acola 1, nw nw ne nw 31-2s-6e, to skid, lost hole. Weinert's Sprague 1, c n½ nw se 4-2s-7e, coring 3313 ft. Weinert's Smith 1A, nec nw 21-2s-7e, coring 3375 ft. Dennis' Dickey 1, nw nwc se 26-2s-7e, rog. Martin & Stoker's Shaeffer 1, nw ne nw nw 8-2s-8e, dr 2440 ft. Moore's Moore 1, se ne nw 16-3s-5e, fsg 2110 ft. Bruce's Holland 1, c s½ nw nw 5-3s-7e, dr 3145 ft. **White**—Sun Oil Co.'s Brown 1, c n½ sw nw 12-4s-9e, rog. **Williamson**—Geo. Oil Syndicate's Scott 1, sw se sw 4-10s-2e, dr plug, td 1790 ft.

KANSAS

Barton—Shaffer's Inc., Barrett 1, sw nw 28-16-14w, dr 3310 ft. Carlock & Atlantic Ref. Co.'s Demel 1, ne nw 30-17-13w, fsg 3127 ft. Long & Johnson's Eveleigh 1, sw ne 3-18-14w, ur at 2730 ft. Murfin et al's Birzer 1, ne sw 21-19-11w, sd 575 ft. Newton & Pulse et al's Hagen 1, sw 20-20-11w, rog. **Butler**—Stewart & Gross' Semisch 1A, nw se sw 34-27-7e dr 2120 ft. **Cowley**—Gralapp et al's Clark 1, nw ne 11-31-3e, fsg 3192 ft. Gralapp & Continental Oil Co.'s Community 1, nwc 23-32-5e, dr 3495 ft. **Greenwood**—Dunlap's Mortgage 1, nw sw 4-28-10e, dr 2165 ft. **Grant**—Panhandle Eastern Gas Co.'s Towler 1, c se¼ 20-30-37w, rust 2475 ft. Panhandle Eastern Gas Co.'s Parsons 1, c n½ sw 25-30-37w, lcn. Panhandle Eastern Gas Co.'s Joyce 1, c se¼ 36-30-37w, dr 2525 ft. **Harvey**—Derby Oil Co. & Gary Drlg. Co.'s Jones 1, cel ne nw 7-22-1w, dr 2280 ft. **Marion**—Cox & McGinnis & Saco Oil Co.'s Jolliffe 1, c s½ sw se 2-22-5e, sd 1175 ft. **McPherson**—W. Kansas Oil & Ref. Co. et al's Union 1, nw ne sw 18-17-1w, ur at 2010 ft. Marylyn Oil Co.'s Dixon 1, nw ne nw 7-19-2w, sd 2760 ft. **Meade**—Pacific Midwest Oil Co.'s Rexford 1, ne se sw 8-30-29w, sd 1435 ft. **Ottawa**—Babcock's Copemen 1, cnl s½ s½ se 7-10-2w, fsg 2675 ft. **Pottawatomie**—Turner et al's Unshide 1, c ne nw 32-8-9e, dr 1460 ft. **Reno**—Garden's Strickler 1, nw 17-22-6w, urst at 3512 ft. **Rice**—Spurrier & Bruce Oil Co.'s Cary 1, ne nw nw 20-18-8w, dr 1690 ft. Glimax Oil Co. et al's Malone 1, se sw nw 36-20-10w, ur at 2690 ft. **Rooks**—Producers' Ham 1, sw nw 25-7-19w, co 1800 ft. Phillips Pet. Co.'s Tangey 1, c nw sw 25-8-18w, dr 2680 ft. **Rush**—Cities Service Oil Co.'s Samuelson 1, c ne¼ 36-11-17w, dr 2455 ft. **Russell**—Phil-Han Oil Co.'s Weimeister 1, sw 18-14-13w, dr 500 ft. Southern's Inc. Sellens 1, swc 22-15-13w, dr 2165 ft. Yankey & Stearnes' Krog 1, nw se nw 7-15-13w, dr 2495 ft. W. Kansas Oil & Ref. Co.'s Schneider 1, ne nw 35-15-14w, rust at 3352 ft. **Sedgwick**—Crowe et al's Murphy 1, sw se 34-29-1w, dr 3345 ft. **Sumner**—Cameron & Spencer's Frey 1, nwc 5-30-1e, dr 1095 ft. Vickers Pet. Co.'s Blue 1, cwl nw nw 1-33-2w, sd 3950 ft. **Thomas**—Ramsey Pet. Co.'s Ryan 1, c ne se 27-8-32w, fsg 4010 ft.

NORTH LOUISIANA

Bienville—Ark. La. Gas Co.'s Davis Lbr. Co. B-1, sw nw sw 7-16n-4w, elev 295 ft, chalk 2526-2791 ft, massive anhydrite 5393-5639 ft, tested est 50 mil ft in drill stem test 5844-76 ft, ¼ in chokes top and bottom, 255 lbs pressure, tested sw 6185-6203 ft, dr 6355 ft. Producers O&G Co.'s (Will Hall), Graves-Thomas 1, se sw se 23-15n-10w, woc 180 ft. **Caddo**—Ark. Fuel Oil Co.'s F. F. Webb 1, c nw sw 4-16n-13w, spd. Colonial Corp.'s Thigpen-Herold 1, ne sw 34-22n-16w (6000 ft test), spd. R. L. Bauman et al's Slattery 1, c nw nw 35-18n-14w, elev 172 ft, massive anhydrite 4331-4593 ft, top Pettit 5541 ft, 20 ft saturation, 7-in csg set on bottom 5596 ft, arr perf and test. J. Thomas Driscoll's Woolworth 1, se se 19-18n-14w, partly rigged up. Hall & Smith's Fee 1, se ne 5-17n-14w, lcn. Hollywood Oil Corp.'s C. & B. Realty Co. 1, ne ne 22-17n-14w, elev 209 ft, massive anhydrite 4422-4679 ft, top Pettit 5673 ft, base Pettit 5719 ft, top Travis Peak 5957 ft, pb to 4975 ft, arr perf at Young horizon in Glen Rose 4954-65 ft, old td 6010 ft. C. D. Loe's Lionel Meyer 1, sw se 33-18n-14w, elev 224 ft, massive anhydrite 4390-4660 ft, dr 5210 ft. Rodessa O&R Corp.'s Chandler 1, c sw ne 34-18n-14w, blew out in Tokio 2420 ft, est 10-15 mil ft gas, dr 4571 ft anhydrite. J. Weil's Dreyfuss 1, sw sw 20-18n-14w, lcn. R. O. Carter et al's Marks Meyer 1, 34-18n-14w, lcn. J. T. Parks et al's Grayson 1, se se 30-19n-15w, woc surf csg. **Caldwell**—Oakes et al's Kyle 1, ne sw ne 18-11n-3e, sd 470 ft. **Catahoula**—Sibley-Sabine Oil Corp.'s Peck 1, 36-10n-8e, sd 2020 ft. **Claiborne**—E. T. Oakes et al's E. C. Kilgore 2, nw se 28-21n-5w, cored 9 ft sat Pettit lime, 7-in csg 5288 ft, made 20 bbls oil hour before acidizing, flowed 40-50 bbls hr after acidizing, casing parted, recemented csg, td 5317 ft. **De Soto**—Samuel S. Alexander's Stell A-1, ne ne 5-12n-16w, elev 252 ft, top Washita 2710 ft, made est 2 mil ft gas and flowed oil intermittently, set pack, arr test, td 2761 ft. **Madison**—Continental Oil Co.'s Singer Mfg. Co. 2, c 2-15n-11e, rur. **Natchitoches**—Jos. E. Popkins' Peavy-Wilson Lbr. Co. 1, 36-7n-9w, sd 300 ft. **Red River**—Magnolia's J. C. Pugh 59, se nw 12-12n-11w, dr 4580 ft (deep test). **Sabine**—Earl Fox et al's Cook Ld. Co. 1, se nw 1-9n-12w, owdd 3655 ft. LeGrande et al's Tatum 1, nw ne 17-8n-13w, acidized, testing, td 2340 ft. Tropical Oil Co.'s Long-Bell 1, 5-8n-13w, arr deepen 3507 ft. Zwolle Synd.'s (Moffitt et al), Mansfield Hdw. Co. 1, ne ne 8-7n-14w, sd 4325 ft. Geo. L. Pace's Logan 3, sw nw 26-10-13, acidized, wosr, td 1952 ft. **Tensas**—H. B. Schumacher's Mounds 4, 39-11n-12e, owdd, td 1750 ft. **Webster**—Magnolia's Pardee C-1, c nw ne 17-23n-11w, elev 203 ft, swabbed dry, so 6025 ft, top Travis Peak 6054 ft, top lower Marine 7998 ft (corrected), cored 6 ft sand, so 8504-10 ft, dr 8907 ft. Magnolia's H. M. Branton 1, ne sw ne 6-22n-9w, elev 226 ft, dr 3730 ft. Sibley-Sabine Corp.'s McDonald 1, nw nw 32-17n-9w, elev 232 ft, top Nacatoch 1197 ft, chalk 1415-1730 ft, top Tokio red beds 3169 ft, dr 5260 ft.

SOUTH LOUISIANA

Assumption—Humble's Milliken & Farwell 1, Labadieville area, 15-14s-14e, dk. **Avoyelles**—Magnolia's Bowden 1, Evergreen area, 7-2s-4e, dr shale 8451 ft. **Beauregard**—Republic's Lutcher Moore 1, Mistic area, 14-7s-2w, dr shale 8686 ft. **Calcasieu**—Sun's Lutcher Moore 2, Lunita area, 12-8s-13w, abn 8951 ft. **Cameron**—Federal Royalty Co.'s State 2, Calcasieu Lake, 13s-9w, lcn. Humble's Hanszen 2, Chalkley area, 9-12s-6w, making gas and distillate 8568 ft. Pure's Calcasieu National Bank 3, Lowry area, 19-12s-4w, woc 242 ft. **Iberia**—Texas Co.'s State 5, Fausse Point, 35-11s-8e, dr shale 5653 ft. **Iberville**—The California Co.'s Schwing Lbr. Co. 1, Bayou Sorrel area, 95-10s-10e, lcn. **Lafourche**—Texas Co.'s La-Terre Co. 1, Golden Meadows, 1-20s-21e, testing 8616 ft; same operator's State Catfish Lake 1, Golden Meadows, 77-19s-21e, lcn. **Orleans**—W. T. Burton's State 1, Lake Ponchartrain, 10s-13e, dr shale 8410 ft; same operator's Faubourgde Montelusin B-2, Lake Ponchartrain, 11s-13e, fsh 8324 ft. **St. Bernard**—Gulf's State RR 4, Lake Borgne, 12s-15e, dr sand 6135 ft. **St. James**—Shell's Schexneyder 1, LaPice area, 38-12s-15e, dk. **St. John The Baptiste**—Shell's Godchaux Sugar 1, LaPlace area, 97-11s-7e, abn 11,005 ft. **St. Landry**—Herton's Thistlewaite Lbr. Co. 1, Beggs area, 60-4s-4e, dr shale 10,510 ft. **St. Martin**—Shell's Hazel Burdin 1, Lake Verret, 15-13s-12e, dr hard sand 8922 ft. Texas Co.'s St. Martin Land Co. 11, Henderson, 21-8s-7e, sd 9404 ft; same operator's State 6, Lake Mongoulou, 10-10s-9e, woc 9839 ft. **Terrebonne**—Shell's Peters 1, South Houma, 73-18s-18e, pb from 11,046 to 10,409 ft. Texas Co.'s Continental Land & Fur Co. 1, Bayou Penchant, 29-18s-14e, pb from 10,039 ft to 9925 ft, woc; same operator's State 2, Coon Point, 22s-14e, dr clay 100 ft. **Vermilion**—Stanolind's Fred Stovall 2, Intra-Coastal City area, 88-14s-3e, dr shale 8102 ft.

MISSISSIPPI

Calhoun—L. C. Lucas' E. C. Boland 1, sw se 9-22n-9e, top Selma chalk 738 ft, sd 760 ft, hd gumbo. **Clarke**—J. L. Ryan's C. C. Eddins 1, sw sw 29-2n-14e, rur. **Claiborne**—Clai-

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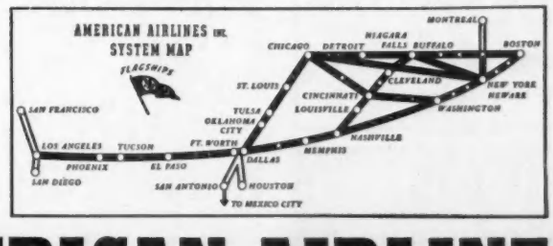

AMERICAN AIRLINES Inc.

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borne County Dev. Co.'s Ruth Hayden 1, s½ se 55-11n-2e, owdd 2950 ft. **Hinds**—Cleve Love et al's S. F. Johnson 1, ne se 29-6n-1w, elev 343 ft, dr 4395 ft hd sand. Southern Nat. Gas Co.'s Progressive Realty Co. 1, se sw ran electrical log to 8190 ft, top red beds 7970 ft, dr 8272 ft, hd red shale. G. Jeffrey's Gaddis Farms 1, nw se 26-7n-4w, sd 3448 ft (Wilcox). **Montgomery**—Dr. T. A. Chichester et al's E. C. Mitchell 1, se nw 30-20n-7e, dk. **Simpson**—Cleve Love et al's N. E. Garner 1, sw ne 1-10n-17w, spd and sd. **Yalabousha**—Chas. W. Crader's Jno. Bruce James 1, ne ne 24-11s-6w, spd and sd to complete rur. Griffin & Melvin's Smith-Warren 1, nw se 6-24n-6e, mim.

MONTANA

Blaine—Walter Draught's Stam 1, csl sw se 10-31n-18e, dr 690 ft. **Petroleum**—Watson Oil Co.'s Austad 1, sw nw se 22-13n-28e, dr 565 ft. **Teton**—California Oil Co.'s Unit 1, ne se sw 26-27n-9w, Dupuyer structure, p&a, dry through the Devonian section, td 3000 ft. Gulf States Oil Co. & Zodiac Oil Co.'s Wallenstein 1, sw sw sw 5-27n-5w, dr 2538 ft; Kellog 1, ne nw ne 23-28n-5w, dr 220 ft. **Yellowstone**—Signal Oil & Gas Co.'s Stoltenberger 1, ne ne sw 18-3n-23e, dr 4950 ft. Riverton Oil Co.'s Fox 1, cel nw ne 14-2n-23e, dr 1865 ft.

MICHIGAN

Allegan—Hilliard's Rankin 1, 10-1n-11w, wocs 6-in 1434 ft. Varner's Vanderkolk 1, 21-3n-12w, so 1591 ft, testing 1620 ft. Rex's Nelson 1, 36-1n-15w, dr 194 ft. Haze's Overbeck 1, 10-3n-15w, rig. Shimmel's Saugatuck 1, 28-3n-15w, sd 640 ft. Daily's Cutler 1, 16-2n-12w, sd 1667 ft. **Arenac**—Bartlett's Clement 1, 6-18n-4e, dr 1990 ft. **Barry**—Schelling's Smith 1, 9-1n-8w, lcn. Collin's Simmons 1, 3-4n-10w, Traverse 1870 ft, so 1940 ft, td 1942 ft, sd **Bay**—Gulf's Bateson 1, 2-14n-4e, dr 2200 ft. Calhoun—Verona's Fruin 1, 29-1s-7w, sd 2300 ft. **Clare**—Huge's Frackelton 1, ne ne ne 18-18n-5w, rig. **Clinton**—McDonald's Koeppen 1, 19-6n-3w, dr 1830 ft. **Crawford**—Weber's Floeter 1, 31-25n-1w, fsg 624 ft. **Genesee**—T. K. Buzzard's Reed 1, 29-17n-2e, rig. **Gladwin**—Bridger's State 1, 29-19n-2e, dr 2240 ft. **Huron**—Leonard's Prospecting's Milling Co. 1, 10-16n-15e, dr 3577 ft. Teater's Kerr 1, 27-16n-13e, rig **Isabella**—Gulf's Hauck 1, 13-15n-5w, dr 1100 ft. **Kent**—MacCallum's Story 1, 32-7n-12w, Traverse 1865-72 ft, so 1872-77 ft, td 1992 ft, testing. **Leelanau**—Lupher's Wilce 1, 34-28n-4w, dr 500 ft. **Mackinac**—Van Kuren's Hiawatha Club 2, 27-44n-9w, dr 620 ft. **Midland**—Andrews' Harris 1, 14-16n-1e, rig. Weller's Hepintall 1, 9-13n-2e, dr 600 ft. Stork's Steger 1, 23-15n-2e, sd 3290 ft. Fortney's Sias 1, 19-14n-2e, dr 3100 ft. **Missaukee**—Moser's Scherenhelm 1, 36-23n-7w, rig. **Ogemaw**—Molloy's Morrison 1, 29-23n-3e, dr 2590 ft. Rowmor's McBain 1, 27-21n-1e, dr 1790 ft. **Osceola**—Champion's Ealy 1, 30-20n-8w, fsg 850 ft. Franklin's Johnson 1, 26-19n-7w, wocs 6-in csg 1859 ft. **Otsego**—Summer's Geraldine 1, 28-30n-3w, fsg 1700 ft. Snow's Moore 1, 13-29n-2w, Traverse 1658 ft, so&g 1865 ft, dr 1890 ft. **Ottawa**—Sommerville's Bowman 1, 19-7n-14w, sd 1770 ft. McClanahan's Kooyes 1, 2-5n-15w, rig. Lentz's Hoezee 1, 30-5n-14w, testing so Traverse 1511 ft. **Saginaw**—Darke's Bell 1, 31-12n-3e, dr 990 ft. **Van Buren**—Ross' Landrus 1, 11-1s-15w, Traverse 1266 ft, so 1268 ft, testing.

JACK A. SCHLEY
Patent Attorney
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OKLAHOMA

Beckham—McWhirter's Fee 1, nw sw sw 34-8n-19w, dr 2195 ft. **Caddo**—Texas Co.'s Smith 1, c ne nw 2-5n-12w, sd, td 2556 ft. **Cleveland**—Big Chief Drlg. Co. & Gulf's Strategier 1, nwc sw 25-9n-2w, dr 6970 ft. **Comanche**—Eldridge's Aetna Life 1, sw se sw 2-1n-10w, dr 1650 ft. **Garfield**—Hughes Drlg. Co.'s Meisner 1, c ne nw 10-20n-4w, rur. **Grady**—Parson's McKenney 1, c sec sw 30-3w-8w, drk. Carter Oil Co. et al's Smith 1, c se sw 25-5n-8w, dr 4600 ft. **Hughes**—Phillips Pet. Co.'s Moulder 1, se sw sw 1-6n-10e, dr 2795 ft. Doup et al's Bond 1, nec sw 7-7n-9e, sd 3098 ft. **Jackson**—Lippert et al's Howard 1, ne sw nw 10-3n-19w, dr 1520 ft. **Kay**—Hamilton's Riddle 1, nwc 3-26n-4e, dr 1685 ft. Crawford et al's Boehl 1, sec nw 34-27n-2w, dr 700 ft. Atlantic O. & R. Co.'s Watson 1, sec nw 28-28n-1w, dr 2485 ft. Tidewater Associated Oil Co.'s Hickman 1, nwc ne 19-28n-1e, coring 3309 ft. **Kiowa**—Crawford & Zelliff's Kirmay 1, swc nw 26-5n-18w, dr 400 ft. **Lincoln**—Summit Drlg. Co.'s Gordon 1, nec 27-17n-2e, dr 2485 ft. **Logan**—Continental Oil Co. et al's Donahoe 1, nw sw 16-18n-2w, dr 4945 ft. **Okfuskee**—Lease Investment Co.'s Fee 1, se sw se 21-13n-10e, dr 2460 ft. **Oklahoma**—McClennan et al's Rodesney 1, c w½ sw ne 27-11n-2w, rog. **Okmulgee**—Wise Drlg. Co.'s Morrow 1, sw nw ne 16-15n-13e, sd 150 ft. **Noble**—Hollenback et al's Mathews 1, c sw nw 9-20n-1e, sd 4935 ft. Phillips Pet. Co.'s Robertson 1, nw ne sw 29-24n-1w, dr 700 ft. **Pawnee**—Kelly's Hill 1, swc se 1-21n-5e, dr 725 ft. **Payne**—Starr et al's McKenzie 1, swc ne 3-18n-3e, rog. **Pittsburg**—Campbell's Featherstone 1, c n½ nw sw 19-3n-12e, sd 510 ft. Supreme Oil Co.'s Stevenson 1, swc se 27-3n-14e, td 1300 ft, mirt. **Pontotoc**—Union Devonian Co.'s Abbott 1A, sw nw ne 34-3n-6e, sd 2620 ft. **Pottawatomie**—Hall & Briscoe's Merkle 1, nwc se 32-8n-5e, sd 4476 ft, hfw. **Seminole**—Rogers' Kidd 1, ne sw se 23-10n-8e, sd 200 ft. **Stephens**—Phillips Pet. Co.'s Culbertson 1, nwc se 4-1n-5w, rur. **Washita**—Continental Oil Co.'s Proctor 1, c nw¼ 23-10n-20n, dr 8560 ft.

EAST TEXAS

Cherokee—Bunn Drl. Co. et al's Boling 1, W. H. Walters sur, 2½ mi se Lone Star, elev 397 ft, Austin chalk 3826-4005 ft, top Woodbine 4005-10 ft, pb to 4008 ft, flowed 83 bbls oil and 45 bbls water initial on ¼-in choke, gas/oil ratio 17,500/1; C. Bounds 2 (95.9-ac), W. H. Walters sur, 2½ mi se Lone Star, elev 346 ft, cut fault 3535-45 ft, Austin chalk 3787-3969 ft, top Woodbine series 3969 ft, td 4085½ ft, testing. C. C. Lanier et al's A. T. O'Neal 1 (131.6-ac), J. M. Procella sur, 3 mi e Troup. **Dallas**—Mauldin Oil Co.'s W. E. Howell 1 (107-ac), S. Layton sur, 8 mi e Grapevine, dr 2280 ft. **Freestone**—J. L. Collins & Co.'s F. E. Hill 1 (150-ac), T. Dubronner Jr, sur and J. Y. Aguilera League, 15 mi e Fairfield, (???). **Henderson**—D. T. Davis et al's J. P. Tarkington 1 (39-ac), W. K. Newell sur, elev 298 ft, top Pecan chalk 1620 ft, Austin chalk 2400-2555 ft, top Woodbine series 2974 ft, sand 3020-23 ft, flowing 25 bbls fluid per hr. Humble-Tide Water-Seaboard's S. S. McGee 1 (342-ac), R. Acosta sur, Opelika Trinity test, cem 20-in 200 ft. Peyton Bros. et al's W. W. Carter-Tarkington 2, W. K. Newell sur, elev 326 ft, rig. **Houston**—Humble's M. B. Hill 1 (160-ac), J. L. Reviere sur A-49, Navarro Crossing, Pecan chalk 4220-4380 ft, Austin chalk 5240-5557 ft, top Woodbine 5741 ft, top oil sand 5874 ft, w.s. 5891-96 ft, gun-perforated 6 shots 5880-82 ft, flowed 5.41 bbls of 34.3 gravity oil per hr 3/16-in choke, gas/oil ratio 14,450/1; H. Dailey 1 (68-ac), J. G. Thompson sur, Pecan chalk 4237-4305 ft, Austin chalk 5239 ft, dr chalk 5330 ft. John G. Mayo et al's E. C. Lively 1 (217-ac), S. Rogers sur, 4 mi ne Grapeland, sp. Wynne Drl. Co.'s Aggie Price 1 (117-ac), T. Strother sur, 4 mi w Grapeland, rig. **Kaufman**—Sam Knoerr et al's J. P. Hunter 1 (17-ac), P. Walker sur, 5 mi s Terrell, dk. W. S. McGee et al's Pritchett 1 (15-ac), J. Hendricks sur, 7 mi w Mabank, Austin chalk 2092-2470 ft, top Woodbine 2294 ft, sd 3104 ft. J. F. McLaughlin et al's Wood-Nash 1, J. C. Cortez sur, ¾ mi se Scurry, dk. **Lamar**—Dahl Bros. and Barr's Lewis-McCuiston 2 (10-ac), R. Russell sur, 1 mi ne Paris, elev 523 ft, sd 30 ft. **Leon**—T. J. Tucker et al's Sam Vane 1 (60-ac), Jas. Webb sur, 4½ mi se Keechi, elev 403 ft, Pecan chalk 3961-4160 ft, Austin chalk 5000-5290 ft, top Woodbine series 5492 ft, top sand 5503 ft, w.s. 5585-5630½ ft, pb to 5553 ft, gun-perforated cas 12 shots 5510-20 ft, flowed 15 bbls fluid per hr ¼-in choke, 40 to 70 percent bs&w. **Navarro**—R. C. Heinen & J. Garonzik (was Jane Robinson et al's), Fortson Bros. 1, Eli Smith sur, 5 mi ne Corsicana, elev 345 ft, Austin chalk 1346-1582 ft, top Woodbine 2185 ft, dr 3490 ft. **Rains**—McKinley & Hastings' McTaggert 1 (21-ac), B. Miller sur, 1 mi w Emory, lcn. **Red River**—Bentley-Sheppard & Stevens' Southern Pine Lumber Co. 1, Geo. S. Parks sur, 17 mi n Clarksville, rig. Daniels et al's J. J. Gaston 1 (657½-ac), J. Guest sur, 2 mi s Detroit, elev 468 ft, sd 1109 ft. Watters et al's J. Phamplin 1, Wm. Moore sur, 3 mi se Kanawha, elev 470 ft, Pecan chalk 78-85 ft, top Red Beds 450 ft, sd 780 ft. C. E. Whitehead et al's R. H. Ringwald 1 (56-ac), A. Moore sur, 1 mi nw Manchester, sd 630 ft. **Rusk**—Drake Drl. Co.-T. L. Johnson's R. L. Needham 1 (136-ac), Jessie Chambers sur, 3 mi sw Lanesville, elev 319 ft, dk. **Smith**—J. H. Thomason et al's J. W. Bartlett 1 (112.84-ac), R. G. Stewart sur, ½ mi se Jamestown, dr 1265 ft. **Van Zandt**—W. S. King et al's Edna Watson 1, M. C. Whitaker sur, 5 mi s Grand Saline, elev 489 ft, sd 2600 ft. F. A. Richardson et al's B. C. Dodd 1 (180-ac), T. W. Hutchinson sur, 2 mi s Frand Saline, elev 427 ft, td 4278 ft, pb to 4050 ft and sd.

EAST TEXAS BORDER COUNTIES

Harrison—R. S. Barnwell's Mrs. Luther Smith 1, A. D. Hope sur, elev 185 ft, dr 1725 ft. **Marion**—Vestal et al's Moseley 1, D. Lane sur, sd 2768 ft; Moseley 2, D. Lane sur, rur. **Panola**—E. P. Pewitt et al's Rushing 1 (751-ac), Mannan Smith sur, lcn. **Sabine**—Hugo Allen et al's Brooks 1, Isaac Lowe sur, sd 5885 ft. **Shelby**—Grady H. Vaughn's Pickering Lbr. Co. 1, Brooks sur, rur. Redditt et al's Pickering Lbr. Co. 3, Snyder sur, 10-in csg 1189 ft, gas blowout at 4870 ft, re-condition mud to core ahead, td 4870 ft.

WEST TEXAS

(This report is confined to the south and east portion of the Permian basin and the Delaware basin.)

Brewster—H. D. Wilcox et al's W. H. Kokernot 1, nw sw sec 12, blk C, J. V. Massey sur, dr 2330 ft. **Coke**—Barnett Pet. Corp.'s J. E. Mims 1, sec T&P sec 39, blk W, elev 2352 ft, sd 1861 ft, used 500 gals acid, no test. **Concho**—A. J. Hennings, Jr. et al's A. E. Jones 1, near nwc 300-ac tr, sec 1879, dr 520 ft. John W. Westbrook et al's Jim Rice 1, swc T&NO sec 18, dr 525 ft. **Crane**—Gulf Oil Corp.'s W. N. Waddell et al 9, c ne ne PSL sec 7, blk B-27, elev 2545 ft, dr lime 4110 ft. Magnolia's University 1-6, sec sec 6, blk 30, elev 2646 ft, top salt 1205 ft, top Yates 2155 ft, top lime 3170 ft, sul w 3500-03 ft, pb to 3250 ft, shot 250 qts 3170-3250 ft, then used 3000 gals acid, pumped 85 bbls oil initial. Standard of Texas' University 1-6, sw se ne sec 6, blk 30, elev 2658 ft, dr 1250 ft. **Crockett**—H. W. Black-Eubanks Oil Co.'s University-Humble 2, se sw nw sec 13, blk 14, top Yates 760 ft, td 1386 ft, shot 140 qts 1325-85 ft, est 100-bbl pumper. Gilcrease Oil Co.'s University-Humble 1-G, nw nw sw sec 13, blk 14, cellar. Stanley Lewis et al's A. C. Hoover 1, se sw ne GC&SF sec 2, blk 1, dr 610 ft. **Culberson**—J. E. Fitz-Patrick et al's Wm. Cameron & Co. 1, c nw nw PSL sec 24, blk 81, sd 945 ft. P. W. Lewis et al's Niehaus 1, se se ne PSL sec 13, blk 109, elev 3955 ft, top Delaware lime 1178 ft, fsh 3090 ft. H. J. W. Niehaus et al's C. M. Caldwell 1, se nw PSL sec 15, blk 109, elev 3878 ft, top Delaware lime 1165 ft, top sand 1215 ft, sd 2500 ft. L. G. Sheddan et al's S. J. Isaacs 1, center PSL sec 25, blk 52, sd 280 ft. **Jeff Davis**—H. F. Wilcox O&G Co.'s Jones-Coffield 1, nec H&TC sec 121, blk 4, elev 4537 ft, sd 3747 ft. **Ector**—Bert Fields-Ben Rogers' R. H. Speer-Owenwood 1, sw nw ne T&P sec 6, blk 44, T-2-S, elev 3205 ft, top salt 1540 ft, top Yates 2810 ft, top brown lime 3870 ft, top solid lime 4035 ft, td 4501 ft, used 2000 gals acid, swab 1 bbl fluid per hr, 25% bs&w, may plug. **El Paso**—Tri-State Oil Co.'s Kinkel Bros. 1, nec sec 237, S. F. No. 7232, elev 3977 ft, sd 3571 ft. **Fisher**—Daube Bros. et al's A. C. Bennett 1-A, nw se ne H&TC sec 51, blk 2, elev 2010 ft, dr 2860 ft. Montour Prod. Co.'s W. L. Barker 2, ne ne se H&TC sec 172, blk 2, elev 1960 ft, sd 3520 ft. **Glasscock**—Crusader Pet. Co., Inc.'s A. D. Neal 1, se ne se T&P sec 20, blk 33, T-3-S, cem 10-in 250 ft. **Tom Green**—Spinner Oil Co.-H. L. Fannin's B. Reed 1, sub-div 39, Mayson-Perry sur, elev 1992 ft, td 5118 ft, dr out cement 4510 ft. B. C. Mann et al's Ike Funk 1, c e½ sw nw H&TC sec 38, blk 5, elev 2371 ft, set cas 963 ft. J. B. Watson et al's Llano 1, sec 16, Llano C.S.L. sur, sd 705 ft. **Howard**—S. S. Owens et al's D. S. Wright 1, nw se se T&P sec 33, blk 33, T-3-N, elev 2747 ft, sd 1378 ft. **Hudspeth**—Haymon Krupp Oil & Land Co.'s K. S. Briggs 1, nwc T&P sec 24, blk 73, Tsp. 7, elev 4016 ft, carrying sul w, dr 4950 ft; S. J. Thaxton 1, near sec ne se T&P sec 34, blk 74, Tsp. 6, top gray lime 4580 ft, ur 4975 ft, td in lime 5133 ft. **Menard**—Lee Pet. Co.-C. D. Hagerty's Jas. Callan 1, swc e½ of J. M. Franz sur, sec 36, elev 2026 ft, testing gas, td 1267 ft. **Nolan**—Chas. E. Peddicord et al's C. H. Tipton 1, near sw nw sw T&P sec 43, blk 19, ur 2565 ft. Union Oil Co. (Cal.'s), J. D. Pepper 1, nec T&P sec 57, blk 21, dr 2190 ft. **Pecos**—E. B. Carruth et al's J. R. Triplett 1, near c e line GC&SF sec 4, blk 194, sp and sd. Cox & Moore's White-Baker 1, c sw se T. C. sec 43, blk Z, sd 1805 ft. Wm. W. Gruber et al's Mrs. M. S. Sanger 1, c nw T. & St. L sec 10, blk 135, lcn. Helmerich & Payne, Inc.-Wright & McMillen's Dow Puckett 1, se se ne T&P sec 66, blk 3, elev 3185 ft, top anhydrite 1210 ft, trace gas 2255-60 and 2735 ft, top Yates 2205 ft, top brown lime 2250 ft, top solid lime 2390 ft, dry and abd 3502 ft. Humble's A. H. Robertson 1, c nw ne T. C. Ry. sec 27, blk OW, elev 2797 ft, top red beds 1295 ft, top Rustler 2280 ft, dr 4940 ft. H. H. Sides et al's Blackstone-

Slaughter 1-a, near sec T. & St. L., sec 25, blk 130, dr 1925 ft. E. M. Thomasson Prod. Co.'s J. Nations 1, sec 1, blk 105, W. P. Howard sur, dr 705 ft. Stanley A. Thompson et al's Elsinore Cattle Co. 1, se se GC&SF sec 53, blk D, elev 2938 ft, fsh 7342 ft. Trans-Pecos Oil Co.'s F. M. Gallaher 1, ne ne nw T&P sec 9, blk 51, Tsp. 10, sd 2240 ft; Popham Land & Cattle Co. 1-B, s½ GH&SA sec 235, blk 11 (3rd hole), sd 2385 ft. Union Oil & Mining Co.'s First Nat'l Bank 1, near nec H&GN sec 6, blk 9, elev 2410 ft, sd 1760 ft. **Presidio**—Brite Production Co.'s L. C. Brite 1, ne¼ GH&SA sec 113, blk 12, sd 5427 ft. **Reagan**—John W. Emch et al's TP Land Trust 1, c n½ s½ sw T&P sec 203, blk 1, elev 2676 ft, top anhydrite 1150 ft, top salt 1210 ft, top Yates 1570 ft, top lime 2365 ft, at 2640 ft tested ½ bbl oil, dd to sul w 2748-52 ft, sd. **Reeves**—H. F. Anthony & Lagoki Oil Co.'s Richards-Shaw 1-a, c n½ nw PSL sec 16, blk 59, sd 360 ft. Frankley & Rice's W. A. Tunstill 1, ne ne nw T&P sec 10, blk 56, Tsp. 2, elev 2906 ft, top Rustler 190 ft, base salt 3070 ft, top Delaware lime 3254 ft, top sand 3283 ft, shot 100 qts 3278-3305 ft, initial 3,770,000 ft gas with trace oil. Ohio Oil Co.'s Popham L&C Co. 1, nw T&P sec 18, blk 54, Tsp. 10, elev 3623 ft, top black lime 4940 ft, dr 5030 ft. **Runnels**—John Castor, A. E. Koerner & H. B. Goodrich's J. C. Beddo 1, sub-div No. 15½, T. T. Williamson sur No. 51, dry and abd 2316 ft. Rex Cannon-Goodrich et al's H. Giesecke 2, Jas. Hughes sur No. 227, co to dd fr 520 ft. J. W. McLean et al's E. H. Pflueger 1, Asa Clark sur, A-506, ur 1861 ft. Stephenson & Jackson's W. J. Fowler 1, near ne ne sw E. T. Ry. sec 150, dry and abd 1350 ft. **Schleicher**—H. P. Opp et al's J. T. Jackson 1, nw ne T. C. Ry. sec 41, blk LL, elev 2353 ft, set cas 950 ft. **Scurry**—H. H. Coffield & Guthrie, Inc.'s E. E. Spears 1, nw nw sw H&TC sec 130, blk 97, elev 2294 ft, top lime 1512 ft, pb fr 3543 to 2493 ft, shot 500 qts 2300-2425 ft, testing 500 ft fluid in hole; First Nat'l Bank (Snyder) 1, sw sw nw H&TC sec 130, blk 97, lcn. Jas. T. Brooks et al's First Nat'l Bank Snyder) 1, ne ne se H&TC sec 129, blk 97, lcn. P. G. Moran et al's F. W. Hardee 1, nwc H&TC sec 99, blk 97, sd 1000 ft. W. E. Callahan et al's First Nat'l Bank Snyder) 1, se se ne H&TC sec 129, blk 97, machine **Sterling**—J. W. Sward et al's T. G. Brennand 1, se se ne H&TC sec 107, blk 2, elev 2535 ft, top Yates 1028 ft, top brown lime 1746 ft, top solid lime 1820 ft, sd 3011 ft. **Sutton**—Geo. Irvin et al was A. A. Basse-S. J. Sackett et al's) W. A. Miers 1, c ne TW& NG sec 54, blk 14, sd 302 ft. **Upton**—White & Wilson's M. B. Webb 1, sw se ne sec 178, blk E, CCSD&RGNG sur, sd 150 ft. **Ward**—J. E. Fitz-Patrick, Frank Pickrell et al's F. I. Dyer 1, w¼ n¼ H&TC sec 135, blk 34, elev 2709 ft, base salt 3845 ft, top Delaware lime 5081 ft, gas pay 5132 ft, est 1½ to 3 million ft sweet gas, fsh tools. **Winkler**—Richardson Oils, Inc.'s J. M. Bashara 1-A, sw sw se PSL sec 22, blk 77, elev 2973 ft, top anhydrite 755 ft, base salt 2260 ft, broken pay 3343-3609 ft, testing 2500 ft oih.

SOUTH TEXAS

SAN ANTONIO DISTRICT

Atascosa — Stanley's Schumann 1, Malone sur, dr plugs 1720 ft. **Bastrop**—Tarver's McDuff 1, Wilbarger sur, dr 1000 ft. Teas, Ashley & Hinton's Grizzard 1, Graham League, dr plugs 7177 ft. **Bexar**—Blackburn's Miller 1, sur 324, moving in csg 461 ft. LeComte's Herbst 1, Leal sur, sidetracking 710 ft. Noake's Oppenheimer 1, Miller sur, sd 1005 ft, Nami's Fields 1, Bustillos sur, sd 737 ft. Phillop's Patton 3, Rodriguez sur, pumping 118 barrels per day 1113½ ft; Patton 4, Rodriguez sur, dr below sur csg. Ridder's Ridder 1, Barerra sur, sd below 245 ft. Van Winkle's Borgfield 1, sur 323, moving in rig. **Blanco**—Johnson's Glasscock 1, sec 50, may aban and stake new loc. Nixon's Crist 1, sur 94, shut down at 735 ft. **Caldwell**—Dye's Voight 1, Watkins sur, shut down for repairs at 2640 ft. Nytex's Bridges 1, Floyd sur, recovered fish and drilled below 2655 ft. **Frio**—Humble's McLean 1, sur No. 162, coring 3505 ft. Humble's Schley 1, Travalder sur, pumped 18 barrels, 50% wash water in 4 hours. **Gonzales**—Hochhiem's DuBose 1, Coffman League, shut down for water. **Guadalupe**—Fetty's Felix 1, Duran sur, rigged up and waiting on water. Huener's Bauer 1, Brown sur, drilled below 850 ft. King's Rosenbrock 1-A, Vincent Duran sur, ran 5 in. casing to about 1650 ft inside 6⅝-in choke, heavy black oil coming from Austin chalk stands at top of hole. William's Weber 1, Torres sur, drilling below 1489 ft. **Kendall**—Carpenter's Siedensticker 1, sur 257, drilling ahead at 520 ft. Comfort's Gass 1, east of Comfort, rigged up. Dewey's Seidensticker 1, sur 18, landed casing at 414 ft. Graham's Werner 1, sur 781, drlg 200 ft. Reed's Marquart 1, Traviesso sur, drilled 775 ft, shut down to repair rig. **Kimble**—Plateau's Bolt 1, sur 42, shut down at 1675 ft. Plateau's Davis 1, sur 44, shut down at 910 ft. Plateau's Hunger 1, sur 43, shut down. **Kinney**—Rose's Gaebler 2, Dolores Soto de Beales sur, drilled chalk, set 100 ft of 10-inch casing. Wardlow's Fee 1, east of Standart, preparing to lower casing at 900 ft to shut off water. **Maverick**—Humble's Indio 1, Rivas grant, recovered fish, cored ahead below 3287 ft. Humble and Wellington's Indio 2, Rivas grant, located 9-8-38. **Medina**—Cromwell's Tondrie 1, Rogers sur, shut down. Gannon's Saathoff 1, sur 844, drilled shale 447 ft. Ziegler's Saathoff 1, sur, 1321, still fishing at 905 ft. **Real**—Smith's Love 1, RR sur, drilling water well. **Williamson**—Midwest's Terchelman 1, Jett sur, drilling sandy shale 3280 ft.

LOWER GULF COAST

Calhoun—Hiawatha's Roemer 2, drilling at 9170 ft. **Hidalgo**—Harding's Card 1, Hidalgo Canal subd, squeezed at 3459 ft to kill gas, waiting on cement. Phillip's Flores 1, drilling at 9280 ft. Y&B's Chapa 1, set casing and drilled water well. Chapman's Bennett 1, Garcia sur, drilled below surface casing at 1500 ft. **Jim Wells**—Magnolia's Garcia 1, Anima Sola Grant, perforated casing at 8302 ft. Magnolia's Moreno 1, south of Ben Bolt, drilled sandy shale at 5288 ft. Shell's Von Blucher 1, Best sur, drilled plugs and perforated casing at 7332 ft. Transwestern's Dunlap 1, sur 181, drilled and cored at 6650 ft. Transwestern's Seelipen 1, pits dug, will drill when No. 1 Dunlap is completed. **Refugio**—Darby's Rooke 1, Cobian sur, dry and abn at 6503 ft. Rutherford's Schirmer 1, Alderete grant, flowing wash water and oil ⅛ in choke 300 lb. tubing 850 lb. casing. **Victoria**—Wellington's Boothe 1, southwest of production, cored below at 3126 ft.

MIRANDO-JACKSON TREND

Bee—Chapman's Ahlinger 1, sur No. 1, drilled below 4457 ft. Dirks' Roberts 1, Morrow sur, has moved in. **De Witt**—Howeth's Albrecht 1, Ramos sur, rigged up. **Duval**—Magnolia's DCRC 1, sur 189, drilled shale 1493 ft, drill stem test 1408-15 ft, dry in 30 minutes. Schwab & Trinity's Welder 1, sur No. 103, dr 1500 ft. **Goliad**—Sun's Shaper 1, 5 miles sw Weesache, core in hard sandy shale at 8238 ft. **Jim Hogg**—Humble's Bass 3, San Rafael grant, drilled below 2500 ft. Robinson's Palacios 1, sur 230, prep to resume dr 80 ft. **Karnes**—Karnestex's Yanta 1, Hardway sur, dr below 1800 ft. **La Salle**—Fisher's Pugh 2, La Salle County, lcn, no contract. Lake-Tobian's O'Connor 1, sur No. 988, shut down to clear titles at 2575 ft. **Lavaca**—Navarro's Brom 1, 4 mi sw Moultan, lcn contract not let. **Live Oak**—Luling's Northern Royalty 1, sur No. 62, cor below in sandy shale 4324 ft. Stewart's Nations 2, Simmons subd, cor below 963 ft. **McMullen**—Jones's Ezzell 40, Ezzell Ranch subd, perforated oil sand, est will pump 150 barrels per day. Shumway & Burns' Shiner Ranch 2, shut down. **Starr**—Circle's Olivares 1, sur 241, squeezed 1025 ft. Hall & Schmidt's Margo 1, sur 70, dr 860 ft. Sun's Oliverez 1, sur 239, dst 5230-33 ft, 13 min rec 700 ft sw 80 ft, mud, waiting on cement 5242 ft. Sun's Speer 1, sur 274, cor ahead dst 5743-63 ft, ¼ in chokes rec 1170 ft sw, 60 ft mud, 10 min. **Webb**—Holland & Mayfair's Bruni 2, Borrego Grant, waiting on orders, dst on sd, no rec 25 min. Cambell's Puig 1, Albercas Grant, dr 100 ft. Killam's Frost Nat'l Bank 1, sur 604, dr 1000 ft. **Zapata**—Thompson's Ramirez 1, por 18, dr 1735 ft.

TEXAS GULF COAST

Brazoria — Humble's Masterson 1, Anchor area, Geo. Robinson sur, dr shale 3686 ft; same operator's Tuttle 1, Iowa Colony area, HT&B 67, dr shale 1065 ft. **Chambers**—F. A. Gillispie's Kirby Pet. Co. 1, West Cotton Lake, Chambers County School Land sur, jetting with gas 6400 ft. **Galveston**—Sun's Humphrey's 1, Bolivar, R. Barrow sur, dr shale 5672 ft. **Harris**—Jack Frazier's Lang 1, Highland area, R. White sur, abn 5514 ft; Griffith 1, Mt. Houston, Adams Smith sur, woc 1600 ft. **Jefferson**—British American Oil Co.'s Gladys City 1, w flank of Spindletop, J. A. Veatch sur, dr shale 6730 ft. Humble's McFaddin B-13, Jefferson Coast salt dome, in Gulf of Mexico, dk; Todd 1, Cheek area, W. Carr sur, dr shale 5824 ft. **Madison**—W. E. Holleman's Cannon Heirs 1, nw of Madisonville, J. P. Phillips sur, abn 1740 ft. **Montgomery**—Deep South's Foster Lbr. Co. 1, P. Bryan sur, sd 6985 ft. Mills Bennett's Lewellyn & Foster 1, sw of Conroe, A. Hodge sur, abn 8751 ft. **Orange**—Sun's Lutcher Moore 1, North Orange area, B. Johnston sur, sdtr 7151 ft. **Trinity**—C. D. Davis et al's Gibson 1, n of Trinity, A. Donovan sur, sd 234 ft. Max V. Scott's First National Bank 1, s of Trinity, W. Beasley sur, abn 2505 ft. **Wharton**—Humble's Hancock 1, e of Louise, L. L. Miller sur, abn 5685 ft; Duncan 1, Hungerford area, A. Edger sur, dr shale 7485 ft.

UTAH

Grand—Cane Creek Oil Co.'s Government 1, nw sw 31-26s-21e, reaming hole at 1000 ft to lower 8¼-in csg to 1810 ft and will carry to 2020 ft for water shut off above objective Cane Creek sand.

WYOMING

Big Horn—Valentine M. Kirk's Frisby 1, csw se 11-49n-94w, dr 700 ft. **Carbon**—Cunningham Oil Co.'s Fee-Union Pacific, nw se ne 21-22n-78w, dr 480 ft. **Niobrara**—Ohio Oil Co.'s Jones-Government 1, swc ne se 30-35n-62w, water basal Sundance 537 ft, dr 1030 ft in red beds. Cow Gulch Oil Co.'s Wm. Magoon 1, ne ne sw 33-35n-65w, spd 90 ft.

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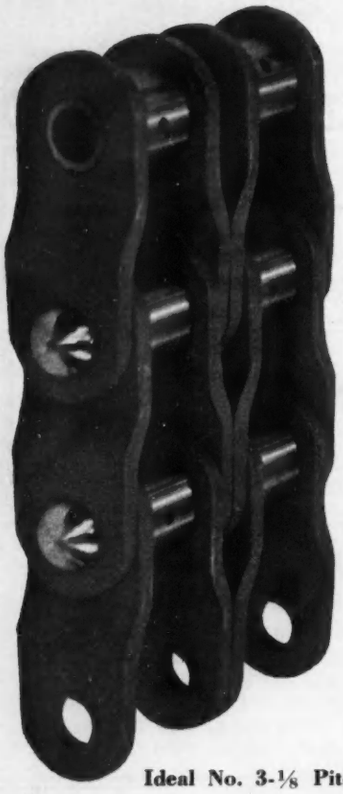


Ideal No. 3-⅛ Pitch Rotary Chain

The National Supply Company, Toledo, Ohio, has recently introduced Ideal No. 3-⅛ pitch rotary chain, made in single and double width to the recently adopted API standards. It is designed to operate on machine-cut tooth sprockets. Since these are made with the same precision as the chain, the resulting operation of the two is quiet and smooth and increases the length of service.

The No. 3-⅛ pitch single width chain has an ultimate strength of 115,000 pounds, and is used to drive rotary tables, cat shafts and other similar requirements. The No. 3-⅛ pitch double width has an ultimate strength of 230,000 pounds, and is used for engine and heavy-duty draw-works drives.

POWER TAKE-OFF COMPRESSOR MOUNTING
Worthington Pump and Machinery Corporation

To fill the requirements of a special field, Worthington Pump and Machinery Corporation of Harrison, New Jersey, has developed a portable air compressor with power take-off drive. Consisting essentially of a Worthington compressor driven through a Worthington Multi-V-Drive by a Hercules drive unit installed between the truck transmission and the front universal joint of the propeller shaft the new unit combines maximum portability with utilization of a minimum of truck pay-load space.

The compressor is the three-cylinder two-stage radial air-cooled type used on the standard Worthington portable mountings, and includes many modern features of construction: the improved Feather Valve, ring-type fins, large sectional type intercooler, articulated connecting rods, force-feed lubrication, and by-pass unloading.

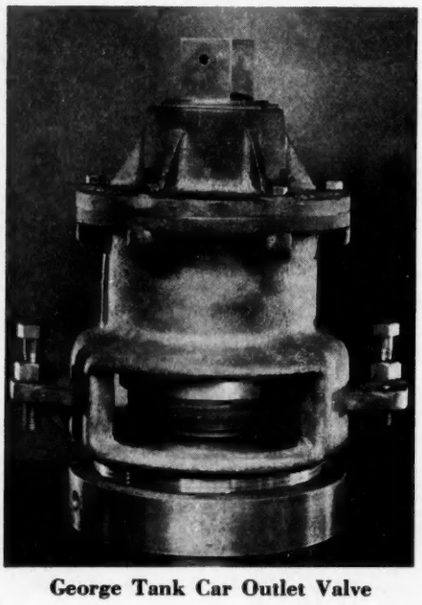
A new bulletin illustrating various applications of the new mounting with complete specifications, has been issued. Write for Bulletin H-850-B55.

TANK CAR OUTLET VALVE
George Valve Company

George Valve Company, Saegerstown, Pa., announces a new type of tank car outlet valve designed to overcome all of the major causes of valve failure and includes a number of other improvements.

Corrosion of the valve parts is obviated by the use of virgin bronze, eliminating freezing, and this bronze is used throughout to prevent corrosion by galvanic action. The presence of scale or other foreign matter between valve and face and seat is eliminated by sealing the face of the valve while it is open and by providing a wiping action which cleans the seat of scale every time the valve is opened. The two advantages are secured by the use of two neoprene parts, which are essentially rings surrounding the face of the valve disk when in the open position although the lower one is webbed across the base of the disk. Neoprene, du Pont's chloroprene rubber, was used for these rings because it was necessary to employ a resilient material which would resist deterioration from contact with chemicals and petroleum derivatives, the liquids commonly carried in tank cars.

The application of the neoprene rings has eliminated the practice of overforcing the valve. Since the seat is always clear of scale, it is not necessary to force the valve in order to close it tightly. However, the design includes another innovation which is planned to do away with breakage even though the workman uses unnecessary force.



George Tank Car Outlet Valve

The basic principles included in this design innovation are compression seating instead of grind seating, and a free-wheeling action. The application of compression seating makes the free-wheeling action possible, but it also eliminates scoring of the valve face, through the grinding action.

MERCURY-BUTTON LIMIT SWITCH
General Electric Company

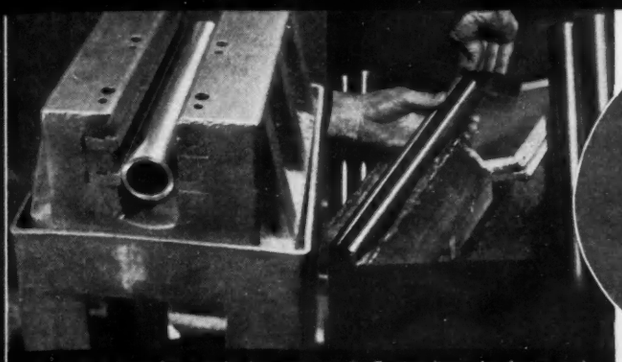
A new single-pole limit switch (CR9440-E1A) which uses a mercury-button contact mechanism to open and close the circuit has been announced by General Electric Company, Schenectady, New York. The new device is particularly suitable for use where the force available for operation of the switch is small, inasmuch as the only force required to operate this switch is that necessary to lift a light-weight molded lever or arm. The arm returns to its lower position by its own weight.

The mercury-button element consists of two corrosion-resistant-metal hemispherical shells separated by a special ceramic disk with an off-center hole. The assembly is partially filled with mercury. An atmosphere of hydrogen prevents burning and corrosion. The unit is hermetically sealed with a glass ring so that there is no question of maintenance.

When the mercury button is rotated in the vertical plane, the off-center hole, normally below the surface of the mercury, is raised out of the mercury, thus opening the circuit between the metal shells. Because of the tendency of the mercury to cohere, and its lack of adhesion to the insulating disk, a positive, quick break is assured.

The mercury button is securely mounted in a sturdy molded assembly, which also serves as a lever arm, and is enclosed in a pressed-steel enclosure with knockouts for conduit connections at both ends. The new switch must be mounted in the vertical position.

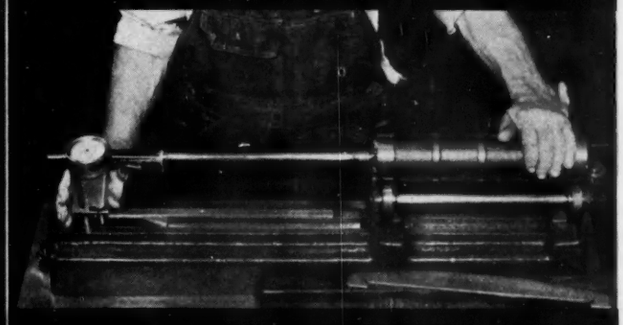
INSPECTION FOR LIFE



1. Testing liners for outside diameter and straightness.

2. Testing liners for facing and surface defects.

3. Testing liners for length.



4. Dial gaging for uniformity of bore.

Every link in the long chain of operations that end in Axelson liners is given the "Go" and "No-Go" inspection. ¶ From the very beginning, in the specially built and specially equipped Axelson foundry, the quality of four kinds of pig iron, six or more kinds of alloys, various grades of steel and fourteen other products, is determined by actual chemical analyses that in every case result in "Go" or "No-Go." ¶ The making and baking of cores—the mulling of molding sand—the construction of the molds—the size of gates and risers—the pouring temperature of the metal—all are controlled by "Go" and "No-Go" standards. ¶ Throughout the many manufacturing operations, including boring, grinding, pressure testing, honing, facing and polishing, with the correct heat treatment according to the type of liner being made—every step means approval or rejection according to rigid "Go" or "No-Go" tests. ¶ It might seem that these progressive manufacturing operations and inspections would be enough to guarantee perfection in the finished liners. Axelson thinks they are not. Axelson must *know* that every liner is absolutely exact as to inside and outside diameters—absolutely the same length as every other Axelson liner—absolutely true as to square, air-tight faces—and absolutely uniform through the entire length of the bore. ¶ In every language, Axelson means excellence.

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THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

This Week with the Industry's EQUIPMENT SUPPLIERS

H. L. McQuiston Joins Lucey Products

H. L. McQuiston, former division superintendent of Phillips Petroleum Company, and more recently operating as an independent producer on the Gulf Coast, has joined Lucey Products Corporation of Tulsa, as special representative with headquarters at the company's new office in Fairfield, Illinois.

McQuiston was with Phillips Petroleum Company since the merger with Independent Oil & Gas Company; and for a period was division superintendent with headquarters at Wichita, moving to Oklahoma City five years ago to take charge of the central division, consisting of Burbank, Seminole and Oklahoma City properties.

Frosty Martin's Son On Endurance Flight

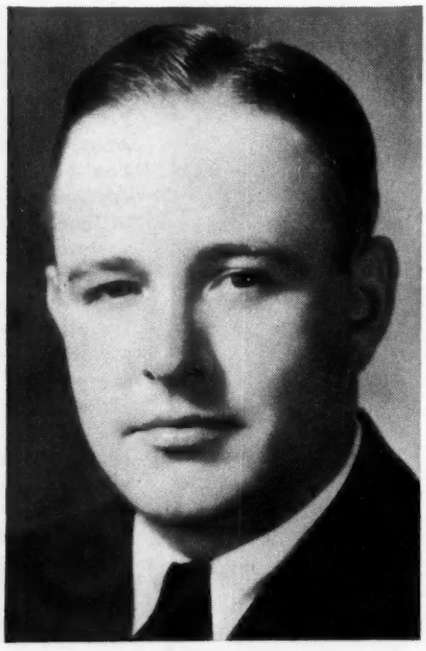
Friends of W. R. (Frosty) Martin of Martin-Decker Corporation will be interested to know that his son "Spud" is one of the crew on the record breaking endurance plane "Little Bear" in its flight in California. As soon as a member of the crew tires he bails out of the plane in a parachute and his successor catches from a speeding automobile a rope ladder trailed by the plane. He then mounts the rope ladder and takes his place in the cockpit. Last Sunday the ship had been in the air exactly a week.

Thomas Transferred to Houston By Harrisburg Steel Corporation

Harrisburg Steel Corporation, Harrisburg, Pennsylvania, recently announced removal of the office of O. C. Thomas, district sales representative, from Tulsa to 607 State National Bank Building, Houston. Thomas is in charge of oil field sales for the company.

Rex Parks Joins Patterson-Ballagh Sales Organization

Patterson-Ballagh Corporation, Los Angeles, announces appointment of Rex Parks as assistant to J. M. "Skeet" O'Melveny, sales manager in the Gulf Coast and Mid-Continent area. Parks has been a driller recently for Loffland Brothers in Kansas and the Gulf Coast,



REX PARKS
Now with Patterson-Ballagh Corporation at Houston.

and has also been connected with J. E. Mabee Drilling Company for several years as roughneck and driller. He joined Bovaird Supply Company as field salesman in Oklahoma, later going with Chicago Pneumatic Tool Company as district manager. He recently left Green Head Bit & Supply Company to join Patterson-Ballagh Corporation. He will make his headquarters in Houston.

Baroid Extends Drilling Mud Analysis With New Laboratory

Construction of a new laboratory building adjoining its general plant at 837 Jackson Street, Los Angeles, affords the Baroid Sales Department the opportunity to further its research and development on drilling fluids.

The addition includes a research laboratory, a mechanical testing laboratory, a testing equipment display room and also houses various departmental offices, besides a mud sample room, duplicating room and photographic laboratory.

The research laboratory is complete in every detail for analytical and development work.

In the mechanical laboratory equipment so designed to stimulate actual conditions as closely as possible has been installed. Here all drilling muds are given exhaustive tests so that the mud engineer can be reasonably certain ahead of time what his mud will do.

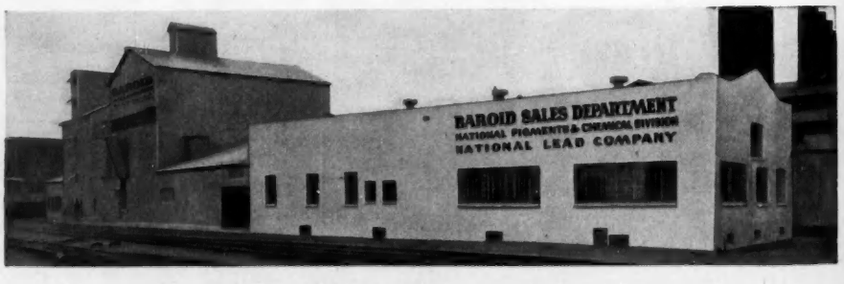
Baroid testing equipment affords the mud engineer an accurate check on his drilling mud right at the well. This fact has gained widespread recognition and the consequent demand for the testing equipment reached the point where it has necessitated the construction of a special display and stock room. Here are Baroid wall-building testers, Baroid mud testing kits and mud testing cabinets, viscosimeters, hydrometers, etc., all assembled and on display. A stock of all necessary equipment and parts are kept on hand.

Wendel Carlson Joins Pump Division of Byron Jackson

The Pump Division of Byron Jackson Company now has a resident representative in Kansas City in the person of Wendel Carlson.

WENDEL CARLSON

Carlson, who has had several years of experience at the Byron Jackson factories, will spread his activities over the petroleum and general industrial fields, and will render agricultural irrigation service. While for convenience of the trade his residence has been established in Kansas City, his business address is Byron Jackson Company, Fort Worth.



New Baroid Sales Department Laboratory

Standco
NO-SMOKE
STANDCO BRAKE LINING
Nothing novel—no bunk—but it gets the job done without scoring brake rims. See page 1940, Composite Catalog.
Standard Brake Lining Co.

Squeaks from the Bull Wheel

Reasonably Safe

You haven't said a word for twenty minutes.

Well, I don't have anything to say.

Don't you ever say anything when you have nothing to say?

No.

Well, then, will you be my wife?

Prepared

A browbeating counsel asked a witness how far he had been from a certain place. "Just four yards, two feet, and six inches," was the reply. "How came you to be so exact, my friend?" "Because I expected some fool or other would ask me, and so I measured it."

Hard to Find

A Minnesota visitor tells about the case of the coroner who was called to a WPA camp to get a body. He reported that he had to examine ten workmen before he finally located the corpse.

Dirty Trick

"Did Brudder Avery gib de bride away?"

"No, sah; he gwine let de groom fin' her out for hisself."

Through With Her

"My wife can be an angel when she wants to be."

"Mine, too—any time, now."

Art Note

"We were at the art gallery this afternoon and Fred explained a modernistic picture to me."

"Did you learn anything from his explanation?"

"Yes, I realized that things are not as bad as they can be painted."

Exclusive

Captain: "What's the matter, Murphy?"

Park Policeman: "It's Mrs. Dinwiddie who donated the bird bath to the park, sir. She called me to say that it wasn't to be used by sparrows."

Specialist

"Does your dog chase cows?"

"No, he's a bull dog."

Shake!

"I made a lot of friends for the company today."

"I didn't sell a thing either."

A Beginning

We must economize. Suppose, darling, that you try your hand at making your own clothes.

Oh, George, dear, I never could do that! Suppose I begin trying to make yours?

Good Little Girl

"Were you a good little girl at Sunday School today?"

"Yes, the teacher offered me a big plate of money, and I said, 'No, thank you.'"

Playing Safe

"Your neighbors are honest. I hope?" one asked the old Negro.

"Yassir, dey is."

"But you keep that loaded shotgun near your hen coop."

"Yas, dat's to keep 'em honest."

The Proof Was There

"It says the man was shot by his wife at close range."

"Then there must have been powder marks on the body."

"Yes, that's why she shot him."

The Power of Education

The new minister in a Georgia church was delivering his first sermon. The janitor was a critical listener from a back corner of the church. The minister's sermon was eloquent, and his prayers seemed to cover the whole category of human wants.

After the services one of the deacons asked the old janitor what he thought of the new minister. "Don't you think he offers up a good prayer, Joe?"

"Ah mos' suhtainly does, boss. Why, dat man axed de good Lord fo' things dat de odder preacher didn't even know He had!"

Just As If Nothing Had Happened

"You're a dear sweet girl, Anna."

"But my name is Sue!"

"You're a dear sweet girl, anna love you with all my heart."

Far Behind

"European military leaders claim they have the people behind them."

"In event of war, of course, the positions would immediately be reversed."

Just a Pawn

"He is the secretary of a chess club."

"But what does he do?"

"He reads the hours of the last meeting."

The Equestrian

"Did you ever back a horse?"

"Yes, I did, once in my life."

"Did you win or lose?"

"I lost fifty dollars."

"How was that?"

"I backed him into a store window."

Comparisons

"The Brownes must be awfully rich, judging from the clothes they wear."

"Oh, one can never tell. Some of the most gorgeous flowers haven't got a scent."

Below Par

"What did Miss Petite say after you kissed her?"

"She told me to call on Friday hereafter, because that was Amateur Night."

What a Man!

"Just think, Dan tried to put his arm around me four times last night."

"My goodness, what an arm!"

Always Faithful

"Is he the sort of fellow who forgets you when you have no money?"

"No, he's an installment collector."

Positive release

. . . WITH THE NEW

SECURITY

LINER SETTING TOOL

Here's another important development by Security engineers—a Liner Setting Tool that is positive and foolproof in its action *because it removes all weight from the releasing thread while backing off.* Not only that, but it has a built-in thrust bearing device that holds the liner tightly in place while the thread is backed off!

Check these features!

★ It automatically eliminates *all* weight on releasing thread.

★ It prevents rotation of liner while backing off.

★ It sets extremely light weight liners and accessories with positive efficiency.

★ It is under complete control from the surface at all times.

★ It has a built-in pack-off and tail pipe connection for circulating or cementing.

A special attachment used with the tool permits scabbing-off damaged casing with a drillable "Securaloy" sleeve and then tightly packing-off both ends of the sleeve —all in one operation.

Write for complete details!

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INDEX TO ADVERTISERS

A	Page
J. S. Abercrombie Co.	—
Abercrombie Pump Co.	—
Ajax Iron Works	—
Allsteel Products Manufacturing Co.	—
American Airlines	91
American Assn. of Petroleum Geologists	82
American Cable Division of American Chain & Cable Co.	—
American Hammered Piston Ring Division of Koppers Co.	—
American Iron & Machine Works Co.	—
American Meter Co.	—
American Sand-Banum Co.	—
American Steel & Wire Co.	—
Athey Truss Wheel Co.	—
Atlas Ball Co.	4
Atlas Supply Co.	—
Axelson Manufacturing Co.	95

B	
Baash-Ross Tool Co.	—
The Babcock & Wilcox Tube Co.	—
Baker Oil Tools, Inc.	3
Baldwin-Duckworth Chain Corp.	—
Bantam Bearings Corp.	—
Baroid Sales Co.	—
William M. Barret, Inc.	93
Bartlett-Hayward Division of Koppers Co.	—
Beaumont Iron Works Co.	—
Bethlehem Steel Co.	6
Black, Sivals & Bryson	—
Bradford Motor Works	78
The Brewster Co.	—
E. M. Brickley & Co.	92
The Bridgeport Machine Co.	54
Broderick & Bascom Rope Co.	—
Buckeye Traction Ditcher Co.	—
The Buda Co.	—
Burkett Bros.	92
A. M. Byers Co.	—
Byron Jackson Co.	—

C	
Jo H. Cable	—
Cameron Iron Works	—
Carnegie-Illinois Steel Corp.	—
J. I. Case Co.	—
Caterpillar Tractor Co.	—
The Cavins Co.	—
Chain Belt Co.	—
Chiksan Oil Tool Co.	—
Climax Molybdenum Co.	—
Columbian Steel Tank Co.	—
Continental Oil Co.	—
The Continental Supply Co.	45
Fred E. Cooper Co.	37
The Cooper-Bessemer Corp.	—
Core Laboratories, Inc.	—
Crane Co.	—
Cummins Engine Co.	49
W. H. Curtin Co.	—

D	
Darling Valve & Manufacturing Co.	39
The Dayton Rubber Manufacturing Co.	41
Deckard Manufacturing Co.	—
Dedman Foundry & Machine Co.	—
DeWitt Operated Hotels	—
Diamond Chain & Manufacturing Co.	—
Dowell Incorporated	—
E. I. du Pont de Nemours & Co.	—

E	
Eastman Oil Well Survey Co.	—
Economy Electric Lantern Co.	—
Elliott Core Drilling Co.	—
Elliott Manufacturing Co.	—
Enardo Foundry & Manufacturing Co.	—

F	
Geo. E. Failing Supply Co.	—
First National Bank, Houston	—
First National Bank & Trust Co. of Tulsa	—
Fluid Packed Pump Company	—
Foote Bros. Gear & Machine Corp.	—
Ford Motor Co.	—
Fort Worth Clearing House Association	4
The Fort Worth Laboratories	93
Franks Manufacturing Corp.	—
Frick-Reid Supply Corp.	—

G	
Gallagher Ranch	90
Gardner-Denver Co.	—
The Garlock Packing Co.	—
General Electric Co.	—
General Motors Corp.	—
Geological Scientific Service Co.	—
Geophysical Service, Inc.	—
H. P. Gott Manufacturing Co.	—
Grant Oil Tool Co.	—
Gray Tool Co.	—
Green Head Bit & Supply Co.	—
The Guiberson Corp.	—
Gulf Coast Machine & Supply Co.	—
Gulf Envelope Co.	—
Gulf Publishing Co.	58 and 66
Gulf States Utilities	—

H	
Halliburton Oil Well Cementing Co.	—
Hardway & Cathey	93
Harnischfeger Corp.	—
Haynes Stellite Co.	7
Hazard Wire Rope Division of American Chain & Cable Co.	Third Cover
The Hercules Powder Co.	—
Hercules Supply Co.	—
Hoard Exploration Co.	93
Houston Laboratories	93
Houston Lighting & Power Co.	65
Hughes Tool Co.	—
Hunt Tool Co.	43 and Fourth Cover
Hyatt Bearings Division	—
Hydrauger Corp.	—

I	
Independent Exploration Co.	—
The Inferno Co.	—
Ingersoll-Rand Co.	—
International Derrick & Equipment Co.	—
International Harvester Co.	27
The International Nickel Co.	—
International Supply Co.	—

J	
Jarecki Manufacturing Co.	—
Jeffrey Manufacturing Co.	—
Jensen Brothers Manufacturing Co.	—
Johns-Manville	87
The S. M. Jones Co.	—
Jones & Laughlin Steel Corp.	—

K	
The Kennedy Valve Manufacturing Co.	—
Kerotest Manufacturing Co.	—
Kesler Manufacturing Co.	—
Keuffel and Esser Co.	—
Keystone Driller Co.	—
M. M. Kinley Co.	—
Kinzbach Tool Co.	—
Koppers Co.	—
Kropp Forge Co.	—

L	
Laminated Shim Co.	—
Landis Machine Co.	—
Lane-Wells Co.	—
Larkin Packer Co.	—
The Layne & Bowler Co.	—
Lee Rubber and Tire Corp.	—
A. Leschen & Sons Rope Co.	—
The Lincoln Electric Co.	5
Link Belt Co.	—
Lone Star Cement Corp.	Second Cover
Lucey Boiler & Manufacturing Co.	—
Neal Lucey Co.	93
Ludlow Valve Manufacturing Co.	78
Lufkin Foundry & Machine Co.	—

M	
MacClatchie Manufacturing Co.	—
MacWhyte Co.	—
D. S. Mair Machinery Corp.	—
Maloney Tank Manufacturing Co.	—
Manhattan Rubber Division	—
Martin-Decker Corp.	—
Hotel McAlpin	—
McKissick Products Corp.	—
The Medart Co.	—
Merco Nordstrom Valve Co.	First Cover
Merla Tool Co.	—
Metric Metal Works	—
Mid-Continent Supply Co.	49
Miller Sand Pump Co.	—
Mission Manufacturing Co.	31
Missouri Pacific	58
Lee C. Moore & Co.	—
Morse Chain Co.	—
U. C. Murcell, Inc.	—
M & V Tank Co.	—

N	
National Bank of Tulsa	—
National Lead Co.	—
The National Supply Co.	29
National Tube Co.	—
New Deal Specialty Co.	—
Norvell-Wilder Supply Co.	—
Novo Engine Co.	—

O	
Walter O'Bannon Co.	77
O.C.S. Manufacturing Co.	—
Oil Center Tool Co.	—
Oil City Brass Works	—
Oil Industry Mailing List Co.	92
Oil Well Improvements Co.	—
Oil Well Supply Co.	35
Oil-World Exposition, Inc.	—
Otis Pressure Control, Inc.	—

P	
The Parkersburg Rig & Reel Co.	10
Patterson-Ballagh Corp.	89
Pelican Well Tool & Supply Co.	83
Petroleum Electric Power Club	—
Petroleum Rectifying Co. of California	—
Petty Geophysical Engineering Co.	—
Philadelphia Gear Works	—
Pittsburgh Equitable Meter Co.	First Cover
Pittsburgh Steel Co.	—
Plowden Supply Co.	—

R	
R-F Electrical Manufacturing Co.	—
Raybestos-Manhattan	—
Reading-Pratt & Cady Co.	—
Rector Well Equipment Co.	—
Reda Pump Co.	—
Reed Roller Bit Co.	57
The Republic Rubber Co.	—
Republic Steel Corp.	—
The Ridge Tool Co.	—
Rollway Bearing Co.	—

S	
Jack A. Schley	92
Schlumberger Well Surveying Corp.	—
Scivally Bros.	—
Security Engineering Co.	97
Seismograph Service Corp.	—
Shell	—
SKF Industries, Inc.	33
A. O. Smith Corp.	—
E. M. Smith Co.	—
Howard Smith Co.	—
The Sonner Burner Co.	—
South Chester Tube Co.	—
Southern Engine & Pump Co.	—
Southern Pacific Lines	75
Spang & Co.	—
Spang Chalfant, Inc.	—
Sperry-Sun Well Surveying Co.	84
Standard Brake Lining Co.	96
Standard Pressed Steel Co.	58
Star Drilling Machine Co.	—
Sterling Engine Co.	—
Stevens Hotel	—

T	
Templeton, Kenly & Co.	93
Texas Electric Steel Casting Co.	61
Texas Iron Works	—
Texas Steel Co.	—
Thermoid Rubber, Division of Thermoid Company	—
Thornhill-Craver Co.	—
The Timken Roller Bearing Co.	25
Tretolite Co.	—
Trinity Portland Cement Co.	—

U	
Union Wire Rope Corp.	—
Union Carbide & Carbon Corp.	7
United States Rubber Co.	—
United States Steel Corp.	—
Universal Atlas Cement Co.	—

W	
Warner & Swasey Co.	—
The Watson-Stillman Co.	88
Waukesha Motor Co.	—
Westinghouse Electric & Mfg. Co.	—
Wheeling Machine Products Co.	—
Wickwire Spencer Steel Co.	—
J. H. Williams & Co.	—
Wilson Supply Co.	—
Worthington Pump & Machinery Corp.	—

Y	
Young Engine Corp.	—
Young Radiator Co.	—
Youngstown Sheet & Tube Co.	8